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General Index
(for specific localities see page headings)

Mac Kaye, D. S.
1933

Butte County, California Section 1

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Butte County, California

1933

9 mi. S, 6 mi. W Chico, Butte Co., Calif.

Sept. 15 - 29, 1933

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Specimens collected belong to Accession # , and are included in:

Mammal Catalog #

U.S. GEOLOGICAL SURVEY
GEORGE OTIS SMITH, DIRECTOR

TOPOGRAPHY

STATE OF CALIFORNIA
J. N. GILLETT, GOVERNOR
NATHANIEL ELLERY, STATE ENGINEER

CALIFORNIA
NEWHARD QUADRANGLE

ENGRAVED APR. 1912 BY U.S.G.S.

R. B. Marshall, Chief Geographer.
T. G. Gerdine, Geographer in charge.
Topography by E. R. Bartlett, Bayard Knock, J. L. Lewis, G. L. Hagman, C. L. Nelson, and E. P. Davis.
Control by C. F. Urquhart and L. F. Biggs.
Surveyed in 1904 and 1910.

SURVEYED IN COOPERATION WITH THE STATE OF CALIFORNIA.

H Knock | Lewis | Bartlett

Scale $\frac{1}{31680}$

1 Mile
5000 Feet
1 Kilometer

Contour interval 5 feet.
Datum is mean sea level.

TRUE NORTH
MAGNETIC NORTH
18°
APPROXIMATE MEAN DECLINATION 1910.

GEO. E. BUTLER,
CHRONOMETER & WATCHMAKER
Alaska Commercial Bldg.
SOR. CAL. & RANDOME STS., S. F.

NEWHARD

DESCRIPTION OF THE TOPOGRAPHIC MAP OF THE UNITED STATES

The United States Geological Survey is making a topographic map of the United States. This work has been in progress since 1882, and more than one-third of the area of the country, excluding outlying possessions, has been mapped. The mapped areas are widely scattered, nearly every State being represented, as shown on the progress maps accompanying each annual report of the Director.

This great map is being published in atlas sheets of convenient size, which are bounded by parallels and meridians. The four-cornered division of land corresponding to an atlas sheet is called a *quadrangle*. The sheets are of approximately the same size: the paper dimensions are 20 by 16½ inches; the map occupies about 17½ inches of height and 11½ to 16 inches of width, the latter varying with latitude. Three scales, however, are employed. The largest scale is 1:62500, or very nearly one mile to one inch; i. e., one linear mile on the ground is represented by one linear inch on the map. This scale is used for the thickly settled or industrially important parts of the country. For the greater part of the country an intermediate scale of 1:125000, or about two miles to one inch, is employed. A third and still smaller scale of 1:250000, or about four miles to one inch, has been used in the desert regions of the far West. A few special maps on larger scales are made of limited areas in mining districts. The sheets on the largest scale cover 15′ of latitude by 15′ of longitude; those on the intermediate scale, 30′ of latitude by 30′ of longitude; and those on the smallest scale, 1° of latitude by 1° of longitude.

The features shown on this map may, for convenience, be classed in three groups: (1) *water*, including seas, lakes, ponds, rivers and other streams, canals, swamps, etc.; (2) *relief*, including mountains, hills, valleys, cliffs, etc.; (3) *culture*, i. e., works of man, such as towns, cities, roads, railroads, boundaries, etc. The conventional signs used for these features are grouped below. Variations appear in some maps of earlier dates.

All water features are shown in *blue*, the smaller streams and canals in full blue lines, and the larger streams, lakes, and the sea by blue water-lines. Certain streams, however, which flow during only a part of the year, their beds being dry at other times, are shown, not by full lines, but by lines of dots and dashes. Ponds which are dry during a part of the year are shown by oblique parallel lines. Salt-water marshes are shown by horizontal ruling interspersed with tufts of blue, and fresh-water marshes and swamps by blue tufts with broken horizontal lines.

Relief is shown by contour lines in *brown*. Each contour passes through points which have the same altitude. One who follows a contour on the ground will go neither uphill nor downhill, but on a level. By the use of contours not only are the shapes of the plains, hills, and mountains shown, but also the elevations. The line of the seacoast itself is a contour line, the datum or zero of elevation being mean sea level. The contour line at, say, 20 feet above sea level is the line that would be the seacoast if the sea were to rise or the land to sink 20 feet. Such a line runs back into the valleys and forward around the points of hills and spurs. On a gentle slope this contour line is far from the present coast line, while on a steep slope it is near it. Thus a succession of these contour lines far apart on the map indicates a gentle slope; if close together, a steep slope; and if the contours run together in one line, as if each were vertically under the one above it, they indicate a cliff. In many parts of the country are depressions or hollows with no outlets. The contours of course surround these, just as they surround hills. Those small hollows known as sinks are usually indicated by hachures, or short dashes, on the inside of the curve. The contour interval, or the vertical distance in feet between one contour and the next, is stated at the bottom of each map. This interval varies according to the character of the area mapped; in a flat country it may be as small as 5 feet; in a mountainous region it may be 200 feet. Certain contours, usually every fifth one, are accompanied by figures stating elevation above sea level. The heights of many definite points, such as road corners, railroad crossings, railroad stations, summits, water surfaces, triangulation stations, and bench marks, are also given. The figures in each case are placed close to the point to which they apply, and express the elevation to the nearest foot only. The *exact* elevations of bench marks and their descriptions, as well as the descriptions and geodetic coordinates of triangulation stations, are published in the annual reports and bulletins of the Survey. The publications pertaining to specified localities may be had on application.

The works of man are shown in *black*, in which color all lettering also is printed. Boundaries, such as State, county, city, land-grant, reservation, etc., are shown by broken lines of different kinds and weights. Houses are shown by small black squares which in the densely built portions of cities and towns merge into blocks. Roads are shown by fine double lines (full for the better roads, dotted for the inferior ones), trails by single dotted lines, and railroads by full black lines with cross lines. Other cultural features are represented by conventions which are easily understood.

The sheets composing the topographic atlas are designated by the name of a principal town or of some prominent natural feature within the quadrangle and the names of adjoining published sheets are printed on the margins. They are sold at five cents each when fewer than 100 copies are purchased, but when ordered in lots of 100 or more copies, whether of the same or of different sheets, the price is three cents each.

The topographic map is the base on which the facts of geology and the mineral resources of a quadrangle are represented. The topographic and geologic maps of a quadrangle are finally bound together, accompanied by a description of the district, to form a folio of the Geologic Atlas of the United States. The folios are sold at twenty-five cents each, excepting that such as are unusually comprehensive are priced accordingly.

Applications for the separate topographic maps or for folios of the Geologic Atlas should be accompanied by cash—the exact amount—or by post-office money order, and should be addressed to—

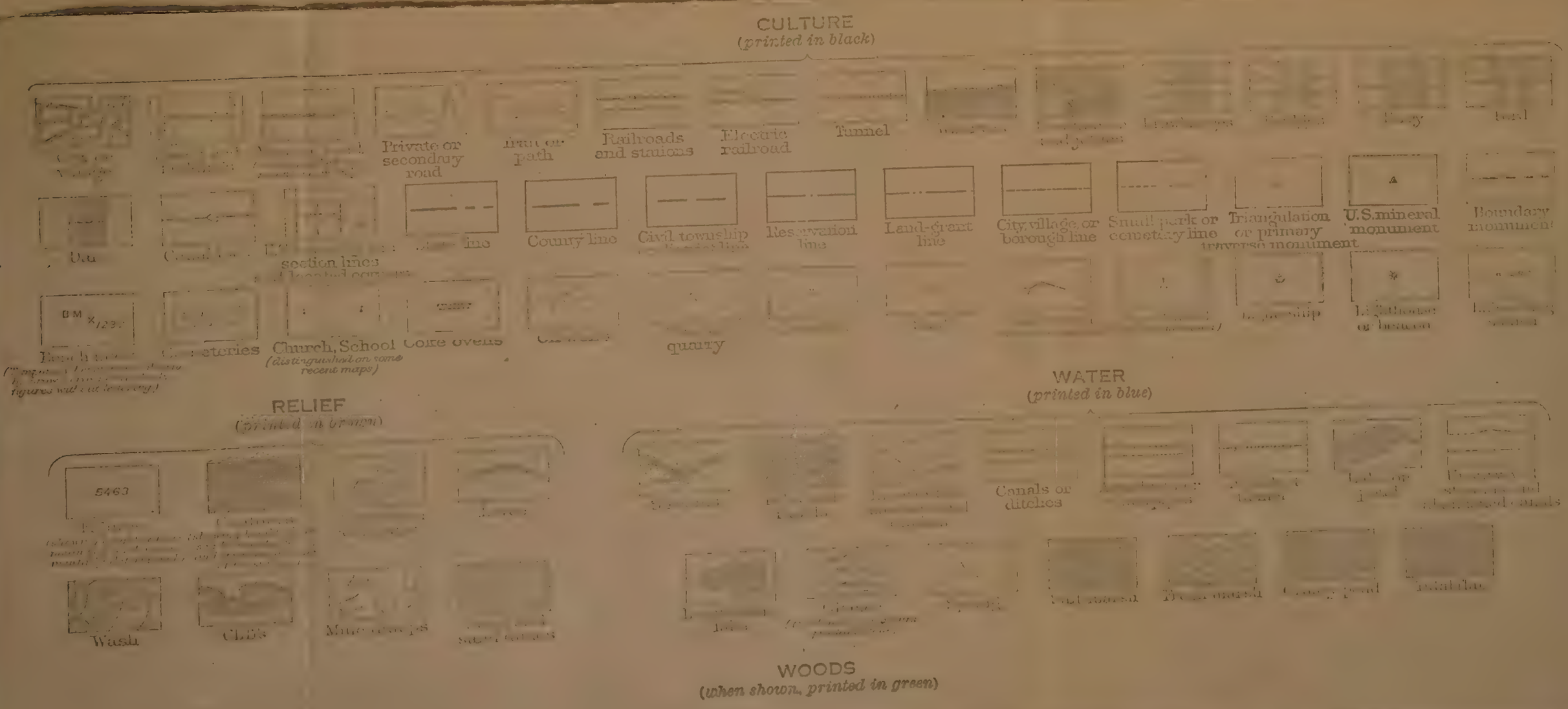
THE DIRECTOR,

United States Geological Survey,

Washington, D. C.

February, 1911

CONVENTIONAL SIGNS



Kaye - 1933

9 mi. S, 6 mi. W, Chico; 100 ft., Butte Co., Calif.
Sept. 15, 1933.

Yesterday, Sept. 14, Ward Russell and myself left Berkeley, Calif., at about 6 P.M. We slept on the side of the road about two miles north of Woodland, Calif. The next morning, (today) we came by way of Marysville, Chico and Dayton, arriving here at about 11:00 A.M. Dr. Hall and Dr. Miller had arrived several hours earlier.

We are located at the main headquarters of the Parrott Ranch. This is a ranch of 14,000 acres, and for at least 70 years it has been closed to the public so far as hunting and fishing are concerned. Consequently, the wild life here has been allowed to persist without the destructive influence of the huntsman. For more detail on the history of this ranch, see the notes of Dr. Hall.

This afternoon Mr. Baber, the superintendant, showed us the ranch, and told us several things of zoological significance and interest. For instance, twice previous to 1918 (which is the date Mr. Baber first came here) the whole ranch, with the exception of certain

9 mi. S, 6 mi. W, Chico; 100 ft., Butte Co., Calif.
Sept. 15, 1933.

high spots, was flooded over by overflow from the Sacramento river and adjacent tributaries. In recent years flooding of the land has occurred less and less often. It has been five years since any more than normal flooding of the land has occurred.

According to several authorities there are no beaver in here at the present time. Mr. Baber says he would not be averse to their introduction to this territory. There are several localities favorable to beaver, especially Perkin's and Eddy's lakes. (See accompanying Newhard Quadrangle for location of these lakes.) Later on more detailed information will be given to the habitat types of these lakes.

This afternoon Dr. Hall, Dr. Miller, Ward Russell and myself drove out to The Lagoon* - originally an ox bow lake formed by a meander of the Sacramento river. We hunted along the east edge of it. This edge of the lagoon is heavily bordered with vegetation, which thins progressively away from the river. Near the lagoon the vegetation

* See Newhard Quadrangle.

9 mi. S, 6 mi. W, Chico; 100 ft. Butte Co., Calif.
Sept. 15, 1933.

consists of alternating clumps of dead willow overgrown with live wild grape; interspersed with an occasional sycamore, likewise parasitized by the wild grape. Near the west edge of this growth oaks and open spaces occur. The soil is clayey, strong in ferro-magnesium minerals. Squirrel holes are everywhere in this particular area, and most of them are occupied. They even line the high bank of the lagoon, extending, on an average, halfway down the 20 foot drop to the surface of the lagoon. The squirrels are quite fearless and easy to shoot. Numbers of Calif. jackrabbits also infest this area; and are, similarly, tame and easy to shoot. Good indications for smaller mammals are not evident. However, I set out 16 mouse traps in a shallow draw choked with wild grape and wild rose.

Upon our approach to this area this afternoon we observed an interesting case exemplifying the "survival of the fittest." We saw a young red tail

9 mi. S, 6 mi. W, Chico; 100 ft., Butte Co., Calif.
Sept. 15, 1933.

hawk (authority of Dr. Miller), attacking and fighting with a ground squirrel. Our approach prevented a natural termination of the battle because the hawk flew away. The squirrel escaped down one of the many holes nearby.

109 Lepus c. californicus. 9 mi. S, 7 mi. W. Chico, 100'; Butte Co., Calif. Sept. 15, 1933. ♂ 585-110-130-143 Wt. 2412

Sept. 16, 1933.

Today we have worked mostly in the wooded section nearer the river. We arose at 5 A.M, and drove out towards the dairy. (See map) In an open field - there were five deer gathered under an oak tree. Though no count was made, the general impression was that there were 3 does and 2 bucks. They were all young. We failed to collect one; they escaped into the timber.

We hunted deer most of the rest of the morning, particularly in the wooded area just east of The Lagoon, and in one of the green draws S.E. of the ranch headquarters. This latter area is choked with elder berry and wild grape. Everywhere we hunted, especially in the latter area, deer tracks and feces were everyplace. We just got occasional glimpses of a deer.

9 mi. S, 6 mi. W, Chico; 100 ft., Butte Co., Calif.
Sept. 16, 1933.

This green draw which is about 6 miles from here seemed to afford cover to a good deal of game. First it makes good cover for deer. Secondly, both cottontails and jack-rabbitts abound therein. I saw them. There is considerable evidence of the presence of small mammals there also. I saw lots of feces, and many runways. Conditions seem to be favorable for microtus, in fact, I was sure I saw one there, running.

Later on, at the very end of that draw, and out of the grape, I found a peromyscus (m. gambeli, I believe) under the bark of a fallen log. I tried to catch him but he was too fast for me.

Also this morning we took a count of the trees in one acre of a typically wooded section, and counted 160, with an average diamter of little more than a foot, and an average heighth of 65 feet. Many acres of trees (oaks) have been cut down, and have been lying on the ground for 2 years. These areas as well as all others are shown on the map and are described.

9 mi. S, 6 mi. W, Chico, 100 ft., Butte Co., Calif.
Sept. 16, 1933.

in the key sheet.

At a point 13 mi. S, 7 mi. W. of Chico, 100 ft. Butte, Co., Calif. I took;

110 Crotalus oregonus

I was setting steel traps near the river, just after the sun had gone down when I saw this snake coiled in the entrance to squirrel hole. Dr. Hall shot it in the neck with his pistol.

About an hour before this I set out 16 traps for microtus in the grass at the lower end of "eddy lake." Just as I had finished I looked up and saw a fox sitting - or standing on a log across the draw from me. He was watching me, and since the sun was nearly at his back I was unable to distinguish any coloration. I took a long shot at him with my shot gun, but failed to collect him.

Sept. 17, 1933.

From the traps which I set in the draw last night for microtus I collected the following specimens; approximately (see next page.)

9mi. S, 6mi. W, Chico; 100 ft. Butte Co., Calif.
Sept. 17, 1933.

14 miles south, and 7½ miles west of Chico, 100 ft., Butte Co., Calif.

111 Microtus c. ♀ - 170 - 50 - 24 - 14 - wt. 47.5 gms.

112 Microtus c. ♂ - 160 - 50 - 25 - 15 wt: 42.8 gms.

113 Microtus c. ♂ - 165 - 55 - 25 - 15 wt: 47.0 gms.

114 Microtus c. ♂ - 160 - 50 - 25 - 14 wt: 41.6 gms.

115 Peromyscus m. gambeli ♀ - 145 - 60 - 19 - 16 wt: 18.2 gms.

10½mi. S, 7½mi. W, Chico, 100', Butte Co., Calif.

MVZ 59930
116 Odocoiles ♂ - 1047 - 121 - 338 - notch 151 - crown - 171; - width - 100. wt: 40.5 lbs.

MVZ 59931
117 Odocoiles ♂ - 1050 - 122 - 348 - 163 - 168 - 105 wt: 44 lbs.

On this morning Ward and I went into the fallen timber and wild grape, just south of the dairy. (see maps.) Before 7:00 A.M. he routed out a bunch of deer and shot 2 large 3 point bucks. I routed

9 mi. S, 6 mi. W., Chico, 100 ft., Butte Co., Calif.
Sept. 17, 1933.

five young fawns and shot two of them. They had not lost their spots yet.

After we brought the deer back, Dr. Hall, Dr. Miller and myself went out for my microtus sets. On our way back we saw a young red tail hawk fly away with a live squirrel - ground squirrel. The hawk had come down into some of the thickest standing timber to get this squirrel; showing that sometimes, at least, red tail hawks prey in wooded sections. Also in this same section Dr. Miller reports having seen several deer.

We spent the rest of the day working on the deer. It so happens that this afternoon has brought the first break in the good weather we have been having. The wind blew hard all afternoon, and clouds gathered, from which a few drops of rain fell this evening.

Sept. 18, 1933

Dr. Hall and Dr. Miller left last night. This morning Ward and I went back to the same place

9mi. S., 6mi. W., Chico, 100ft., Butte Co., Calif.
Sept. 18, 1933.

where he got the deer yesterday. I saw one doe only, and missed a long difficult shot at it. Ward shot a doe, which we skinned today.

This afternoon we went out to pick up the steel traps which I set out Saturday night. Of the three traps which I set, one was not touched, the second was spring, and the third had a buzzard in it.

While I was looking at these traps, it occurred to me to look again in the squirrel hole from which I had taken the rattle snake the other night. I had heard that rattlesnakes are often found where others were recently killed. I wished to see if I could substantiate this theory. I did. I found an even larger one in the <u>exact</u> spot from which I had taken the first one. I'm going back again to see if I can find another, a third one. There is apparently not a nest of them because both of them backed as far down the hole as they could which was only 3 feet, and in neither case could I detect more

9mi. S., 6mi. W., Chico, 100 ft. Butte Co. Calif.
Sept. 18, 1933.

than the one.

Later this afternoon Ward and I set out five steel traps along the edge of Perkins lake. There were plenty of coon tracks distinguishable along the edge of the lake, and a few skunk tracks not so distinguishable. While we were setting these traps a flock of wood ducks flew up and away. There were about 8 in the flock. They had been in the brush at the edge of the lake.

Now is as good a time as any to bring in the subject of birds. Dr. Miller and Dr. Hall collected all the birds that have been collected so far. But Ward and I have had our eyes open, and have been particularly impressed by the numbers and varieties of birds here. Quail are here by the thousands. In fact, in the air, in the tree and bush, and on the ground there are always many birds to be seen. Also there are numbers of ring-necked pheasants around here. Later on I will list the birds by habitat and ecologic niche. There is such a tremendous amount of material here that it would be un-

3mi. S., 6mi. W, Chico, 100ft. Butte Co., Calif.
Sept. 18, 1933.

wise to give any sort of definite listing of birds here as yet. On the map I will have the habitats located and designated. On seperate sheets of paper I will have, as near as possible, a complete report on the vertebrate life in each habitat, and summaries relating one ecologic niche to another.

All day today, the weather has been fine, no wind or clouds. The visibility was good, and the day warm.

Sept. 19, 1933.

13mi. S, 7mi. W, Chico, 100', Butte Co., Calif.

118 Thamnophis taken Sept. 17, '33.

119 Crotalus oregonus taken Sept. 18, '33

Yesterday noon, one of the employees here at the ranch, Ellsworth Miller, brought us a horned toad which he said he had collected 10 miles east of Chico.

120 Phrynosoma Taken Sept. 18, '33.

Today Ward shot a beautiful 228 lb. buck. He got it in the same place from which we have taken all our deer; the fallen Timber and grape

9 mi. S, 6 mi. W, Chico, 100 ft., Butte Co., Calif.
Sept. 19, 1933.

just south of the dairy. It seems the bucks are a little more wary than the does and fawns. We have to drive the bucks out of the grape - while very often we see doe and fawn eating at the outer edges of the grape choked draws.

We looked at our steel traps and found only a Norway rat. We have now seen skunk tracks in all parts of the ranch. We even saw them in the headquarters grounds today. Coon tracks are not so plentiful.

Sept. 20, 1933

It took a long time to get our deer this morning, and when we did it was only a small spike buck. We do not find the deer so much in the open now as we did when we first came. However I had a chance to make some interesting bird observations this morning.

About seven A.M. I was looking for deer near the edge of the tall timber. In one tall dead tree there were three buzzards. Two of them

9mi. S, 6mi. W, Chico, 100 ft., Butte Co., Calif.
Sept. 20, 1933.

were sitting normally enough, but the third drew my attention. At first I doubted it was a buzzard. It was sitting, back to the sun, with its wings fully outstretched. It was absolutely motionless. It looked for all the world like a poor mount nailed to the top of the tree. For very nearly 20 minutes it never moved, and then it moved its head, the ends of the wings began to droop, and finally, it folded its wings. No sooner did it resume a "normal" posture than the other two buzzards opened their wings to sun. Their wings were only out for five minutes.

Later on in the morning I saw a house cat stalking quail. A single male quail saw it coming and climbed high on a limb of one of the fallen oaks. It began to cluck rapidly ("chuck-it, chuck it, chuck it"), and the rest of the flock of quail, hurriedly, but quietly "marched" down the limbs and disappeared in the grass. The male quail continued to sound his warning until the cat gave up and went away.

9mi. S, 6mi. W, Chico, 100', Butte Co., Calif.
Sept. 20, 1933.

There were about eighteen quail in the flock. That was while we were still hunting deer.

Still later in the day - in the latter part of the afternoon I got to make another interesting bird observation. Ward and I were back in the thick, tall timber, a little further back from where I saw the buzzards this morning. We frightened about 20 buzzards out of a dead tree. All the grass and grape at the base of this tree was painted white with droppings. Also all the ground about was strewn with feathers. Apparently the birds had done much molting in this tree. Contour, tail and wing feathers were all around.

We were at this time out setting steel traps in the trails leading through the brush, in our deer hunting grounds. Earlier in the day we had looked at our steel traps along Perkin's lake, and had caught only a ground squirrel.

We hunted deer after setting the afternoon traps, but didn't get

9 mi. S, 6 mi. W, Chico, 180 ft., Butte Co., Calif.
Sept. 20, 1933.

any. However, I did get another rattlesnake, the third so far on this trip. He was only a small one with one rattle and a button. It was lying in one of the trails through the grass in our deer "acres".

After dinner tonight we had still more productive activity. We went out in the truck with two of the boys from the ranch. We were going to hunt skunk by headlight and spot light. We went down along Angel Slough (~~scop~~ see map). We were fortunate to see two skunk, and we shot and collected both, a large male and a large female. They were striped. They seem to be slow and sluggish, at least, when the lights of the car are on them. Rather surprising, considering they are carnivorous and depend on catching live food for sustenance. However, their fat heavy bodies, & their short stumpy legs would seem to bear this fact out - i.e. their sluggishness.

The weather today has been good. We went to Chico this afternoon to get some rifle shells; All in all, a big day.

9mi. S, 6mi. W, Chico, 100ft. Butte Co, Calif.
Sept. 21, 1933.

Our deer hunt this morning yielded two specimens - one doe, and one doe-fawn. I got the fawn; from-

MVZ 59932 10.5 mi. S, 7.5 mi. W, Chico, 100', Butte Co., Calif.

121 Odocoiles ♀ 1160-140-370 (notch 160) (crown 170), (width 100). Wt. = 50 lbs.
Sept. 21, 1933.

122 Crotalus oregonus - 10.5 S, 7.5 mi. W, Chico., 100', Butte Co., Calif. Sept. 20, 1933.

We have got some more information on the deer now. There are practically no parasites on them except ticks. We found, besides the ticks, just one larvae (fat + large) in between the skin and the body at the base of the neck. Also we know pretty well what they eat, both from seeing them feed, from seeing plants eaten, and by examining the contents of their stomachs. From all the information we can gather, it seems to me that they feed chiefly on oak leaves. We always find oak leaves in their stomach contents, and always these leaves seem to have been the body of the "meals". Though once we found many "ground cherries" in a stomach. This fact - that they

9mi. S, 6mi. W, Chico, 100ft., Butte Co., Calif.
Sept. 21, 1933.

live mostly on oak leaves leads to several other logical inferences. First, that the deer must feed at night. We have never seen them out of the draws in the day time and it is only in the open, in fallen timber, that they can get oak leaves. Therefore, they must feed at night. Secondly, they use the wild grape draws only for shade and concealment and not for food. We have never seen grape leaves in their stomachs, nor have we ever noticed any leaves of the grape showing signs of having been eaten by the deer. Other information concerning deer which we have at hand is an average figure on their "dressing off" percentage. 45% seems to be the average.

We got nothing in our traps today - though we did catch a gopher out of Mr. Babb's lawn yesterday.

We had two more contributions today; ~~an~~ Mr. Joe Dancho brought in a great horned owl which he shot at the south end of the ranch this morning. Nick brought in a bat which he found between two

9 mi. S. 6 mi. W, Chico, 100 ft., Butte Co., Calif.
Sept. 21, 1933.

boxes.

We saw a young red tail hawk fighting with another which was flying off with a small mammal in its claws. The hawk with the mammal was driven to the ground by the other and despoiled of his catch. The mammal was not a squirrel, though it was almost as large as a small squirrel. We saw this in the morning after our deer hunt. The scene took place in an open field sprinkled with occasional oaks.

Sept. 22, 1933

A spike buck and a yearling doe were the results of our mornings hunt. Ward got both. Nothing else of note occurred today except the arrival of Bob Orr, and a short visit from Mr. Joe Hunter. The weather has become a little sultry, the wind has changed to the south. The day was spent in work on the deer. We find we have time for hardly anything except deer.

9mi. S, 6mi. W, Chico, 100ft., Butte Co., Calif.
Sept. 23, 1933.

This morning I had a little change of luck and was able to procure a two point buck. Ward got one 116 lb. doe, but had to go a long ways for it. Deer seem to be getting scarcer in this area. Perhaps our hunting here has made them more than usually cautious, or else has driven some of them to some other section of the ranch. Bob Orr was with us this morning, and he and Ward saw a pure white fawn, but were unable to procure it.

MVZ 59933
123 Odocoiles 10.5 mi. S, 7.5 mi. W, Chico, 100', Butte Co., Calif. ♂ 1400-174-442-notch 172-crown 190-width 105., wt: 115 lbs. wt: minus intestines + blood, 83 lbs., wt: meat + bones, 62½.

MVZ 59934
124 Odocoiles 10.5 mi. S, 7.5 W. Chico, 100', Butte Co., Calif. ♂ - pick up.

This last specimen was a fine 2 point buck skull. Some of the rest of the skeleton was attached to it, and some of the hide still stuck to the skull.

125 Odocoiles 10 mi. S, 7 mi. W, Chico, 100', Butte Co., Calif. ♀ - pick up.

126 Crotalus oregonus 10.5 mi. S, 7.5 mi. W, Chico, 100', Butte Co., Calif.

9mi. S, 6mi. W, Chico, 100ft., Butte Co., Calif.
Sept. 23, 1933.

This rattlesnake is the biggest one we've caught yet. It measured 42 inches in length. It was very active, and put up a great fight before we captured it. It has ten rattles. We found it on a deer trail at the edge of the fallen timber.

skull
127 Mephitis occidentalis 10.5mi. S, 7.5mi. W, Chico, 100', Butte Co., Calif. - pick up

I found a skunk skeleton lying in the grass, the skull was good enough to save; so I saved it.

128 Berrhonotus 10.5S, 7.5mi. W, Chico - Sept. 23.

It wasn't until 2 P.M. that we finally got Ward's dol in; so once again we had no time for anything except deer, though Bob went out to set out some traps.

However, just as we went to dinner we noticed something interesting. On the roof of the house in back of ours were gathered about 25 magpies. They were all facing SW, and were quiet - which is unusual for them. This makes the second night we have observed this - and there is no excreta on the roof!!

Tonight we have decided to get no more deer.

9 mi. S, 6 mi. W, Chico, 100 ft., Butte Co., Calif.
Sept. 24, 1933.

We ate breakfast today! The first time since we've been here. We didn't go deer hunting. During the morning we cleaned up all the left over work on the deer and got ready to do some trapping in the afternoon.

I took the Red and went to the south end of the ranch. I revisited the hole from which I got the first two rattlesnakes, but failed to get a third. I set a line of traps at the extreme end of Eddy lake - 15 mouse traps and five steel traps. This was in exactly the same place at which I caught the microtus about a week ago. I also set a line of mouse traps in the place where we had been doing our deer hunting. In both places the habitat was a wild grape draw. The latter, had no water near, while 100 ft. from where I set my traps at Eddy there was water; so I expect different genera from the two places, though the vegetation is in both cases the same.

Bob took the dodge and set out two lines of traps, one at the lower end of Perkin's lake, and the other in

9mi. S, 6mi. W, Chico, 180 ft., Butte Co., Calif.
Sept. 24, 1933.

our "deer grounds".

I would like to say now that the weathering has been unsettled and cloudy the last two days. Last night several drops of rain fell; and tonight a little more fell.

This afternoon I saw a song sparrow in the fallen timber section south of the dairy. It is the first I have seen here. I wonder whether or not the unsettled weather has brought it out. Also I saw numbers of white-crowned sparrows out in the same place this afternoon. And since this is the first time I have particularly noticed them, I wonder, again, if the fact that saw both the species for the first time here, is indicative of anything.

I have noticed yesterday and today an increase in the numbers and size of the flocks of ducks flying overhead. Mr. Baber says they are beginning to show up in large numbers at the rice fields.

I saw more buzzards this morning perched with their wings open to the sun. And again they were motionless.

9 mi. S, 6 mi. W, Chico, 100 ft., Butte Co., Calif.
Sept. 26, 1933.

I only got six specimens this morning from my wooden traps that were fit to put up - three microtus and three reithrodontomys. The microtus I got from the same place I got the others, and the reithrodontomys were collected from the line I had set in our deer grounds. Also this morning I caught a small striped skunk in a steel trap from the edge of Perkin's lake. Another buzzard got caught in one of my steel traps set under heavy foliage at the edge of the lake. Perhaps he finds his food as much by odor as by sight.

This afternoon I set out another line of mouse traps at Eddy lake. I set the line so that it took a cross section through the fallen timber, the line of junction with the draw, and the draw itself. I wished to see how far out into the timber the microtus extended, and how far into the draw the peromyscus extended, or if there was any overlapping at all.

Also this afternoon Bob shot two brush rabbits, proving they are here.

Ward left this morning.

Kaye - 1933

9 mi. S, 6 mi. W, Chico, 100 ft., Butte Co., Calif.
Sept. 26, 1933.

From my trap line at Eddy lake I caught 12 microtus, 4 peromyscus and one reithrodontomys. I found that the microtus extended as far into the timber as my traps extended, and the peromyscus didn't get into the draw at all.

The six specimens I got yesterday I wish to enter now: from a point 14 mi. S, 7.5 mi. W, Chico, 100 ft., Butte Co, Calif:

129 Reithrodontomys ♂ - 132 - 65 - 17 - 14
wt: 9.3 gms. Sept, 25, '33

130 Reithrodontomys ♂ - 155 - 80 - 18 - 16
wt: 11.6 gms. Sept. 25, '33.

131 Reithrodontomys ♂ 140 - 71 - 17 - 14
wt: 10.5 gms. Sept: 25, 1933.

132 Microtus ♂ - 160 - 50 - 25 - 18
wt: 38.3 gms. Sept: 25, 1933.

133 Microtus ♂ 150 - 53 - 22 - 16
wt: 32.8 gms. Sept. 25, 1933

134 Microtus ♂ 153 - 50 - 24 - 14
wt: 37.1 gm. Sept. 25, 1933.

135 Mephitis occidentalis ♀ 625 - 305 - 75 - 30
wt: 1578 gms. Sept. 25, 1933. 10 mi. S, 6 mi. W.

and todays specimens - same locality -
14 mi. S, 7.5 mi. W, Chico, 100 ft., Butte Co., Calif.

136 Microtus ♂ 163 - 53 - 24 - 18
wt: 48 gm. Sept. 26, '33.

9mi. S, 6mi. W, Chico, 100ft., Butte Co., Calif.
Sept. 26, 1933.

137 Microtus ♂ 170-56-26-19
wt: 48 gms. Sept. 26, '33.

138 Microtus ♂ 170-56-26-19
wt: 49.4 gms. Sept. 26, 1933.

139 Microtus ♀ 155-48-23-17
wt: 43.4 gms. Sept. 26, 1933.

140 Microtus ♀ 150-46-22-16
wt: 43.4 gm. Sept. 26, 1933.

141 Microtus ♂ 170-55-26-19
wt: 52.4 gm. Sept. 26, 1933.

142 Microtus ♀ 170-60-24-18
wt: 52 gms. Sept. 26, 1933.

143 Microtus ♀ 140-45-23-15
wt: 32.5 gms. Sept. 26, 1933.

144 Microtus ♀ 150-48-22-17
wt: 34 gms. Sept. 26, 1933.

145 Microtus ♀ 120-38-21-15
wt: 23 gms. Sept. 26, 1933.

I saw 7 deer this morning at Eddy lake. Also I saw several flocks of ducks (spring) flying overhead. This afternoon we went out again, and I set a line of traps at another arm of Eddy lake about a mile & north of the first line. Also I saw a good number of deer two. I watched 3 or 4 jump in the water and swim across. I set 6 steel traps and 12 mouse traps.

Kaye-1933

9 mi. S, 6 mi. W. Chico, 100 ft., Butte Co., Calif.
Sept. 27, 1933.

Today has been about the most eventful day we've had. However, we didn't have much luck with our traps. I got nothing in my steel traps and got only 6 mice - 3 microtus, 2 peromyscus, and one reithrodontomys, none of them were worth saving. In most cases something had eaten enough of the mice to spoil them. I saw a small "centipede" like creature fall off of one of the mice when I picked it up - but this "thing" got away too fast for me to be able to ascertain what it was. I don't believe that shrews had been working on them - though the habitat is good for shrew, and though my shrew sets produced nothing.

Also this morning I saw a flock of cormorants (farallone) flying overhead. This afternoon when we went out again, we found the main body of Eddy lake and looked it over for trapping possibilities. The sides were perpendicular, and afforded no chance to trap at the edge of the lake. We did raise up nearly 50 wood ducks. In the oaks near the lake we saw six Lewis woodpeckers.

After dinner tonight we took two of the

9mi. S, 6mi. W, Chico, 100 ft., Butte Co., Calif.
Sept. 27, 1933.

boys from the ranch and went hunting along the slough - (angel) - the same place - and in the same way we hunted at night before. We got six coons, one skunk, and three jack-rabbitts. We got five of the coons out of one tree. In more detail - While we were riding along - I suddenly saw eyes shining - shining red. My first impression was house cat. I recalled that cats' eyes shine blue, so I then knew the animal was coon - since it was in a tree. We turned a flashlight on it - shot it, saw another - shot it, and so on until we had five out of that tree. We then turned off the road and drove across a stubble field to the edge of Eddy. I saw another pair of red eyes - shot between them, and another coon fell out. A little further along we saw a skunk ahead, and I shot it. Also - while in this same locality, we saw something else interesting. We were shining the spotlight up into the trees - looking for coon. High in a dead oak, our light picked out a barn owl sitting in a large hole in a limb. Soon another owl appeared

9mi. S, 6mi. W, Chico, 100 ft., Butte Co., Calif.
Sept. 27, 1933.

from within, and looked out over the shoulder of the first. The hole was about a foot in diameter. The owls in their hole in this great dead limb against a moonlight sky made ~~quite~~ quite an impressive, and a somewhat eerie picture.

The coons and skunk came from 10mi. S, 6mi. W, Chico, 100 ft. Butte Co., Calif.

146 Procyon lotor ♂ 685-250-110-60
wt: not taken Sept. 27, 1933.

147 Procyon lotor ♂ 680-255-116-55
wt: — Sept. 27, 1933.

148 Procyon lotor ♂ 695-260-117-60
wt: — Sept. 27, 1933.

149 Procyon lotor ♂ 705-270-123-61
wt: — Sept. 27, 1933.

150 Procyon lotor ♀ 680-260-116-55
wt: — Sept. 27, 1933.

151 Mephitis occidentalis ♀ 660-315-78-35
wt: 1911 gms. Sept. 27, 1933.

This afternoon we also set out a line of gopher traps - and shot a large series of rabbits. We didn't put out any mouse traps, and we didn't need to! We have nearly enough specimens to last us two days.

9mi. S, 6mi. W, Chico, 100 ft. Butte Co., Calif.
Sept. 28, 1933.

Just by way of being sure I had plenty to do today, it was so arranged that I get a skunk in a steel trap this morning. I took it from my line at the extreme south:

14mi. S, 7.5 mi. W, Chico, 100 ft., Butte Co., Calif.

152 Mephitis occidentalis ♂ 705-350-83-35
wt: 2266 gms. Sept. 28, 1933.

I have been busy all day, and though I took some pictures this morning, I didn't get any outside work done today.

Sept. 29, 1933

Today was our last day here, and I got another skunk! We spent the day cleaning up our work. We will leave tomorrow morning.

(Summaries on following pages)

14 mi. S, 7.5 mi. W, Chico, 100', Butte Co., Calif.

153 Mephitis occidentalis ♀ wt: 2198 - 625-305-73-32 Sept. 29, 1933.

Santa Cruz, 50', Santa Cruz Co., Calif.
Oct. 4, 1933.

Summary:

There is a good deal of the ranch we didn't get to cover. We didn't get down to the rice fields where many different species of water birds were reported. We didn't cover the north section of the ranch at all, north or east of the lagoon. The east half of the ranch we likewise didn't work, but to the best of my knowledge we did work the most interesting and productive parts of the ranch.

There seems to be a scarcity of the smaller mammals on the ranch. We found very few peromyscus, mus musculus, and no dipodomys. However, there did seem to be plenty microtus and reithrodontomys. The douglas ground squirrel was common in one or two small sections, and a few were to be found in a few larger areas, the open fields. The large number of carnivores, and predacious birds attest to the presence of many small mammals, but also serves to act as a check on the wholesale spread of the smaller species.

We found no sign of weasel, but Mr. Baber says there are a few

Santa Cruz, 50', Santa Cruz Co., Calif.
Oct. 4, 1933.

on the ranch. Mink have been reported twice, once by a ranch hand, and once by Mr. McLain of the Fish and game commission. No otter or opossum were reported, and we found no signs of either.

I'm going to make complete lists of the birds, mammals, reptiles, and amphibians as possible seen and recognized - then I'll list them by habitat.

- Birds -

1. Farallone cormorant
2. White pelican
3. American egret
4. Great blue heron
5. Little green heron
6. Ruddy duck
7. Mallard
8. Sprig
9. Wood duck
10. Kingfisher
11. Killdeer
12. Calif. woodpecker
13. Nuttall "
14. Willow "
15. Red breasted sapsucker
16. Barn owl

Santa Cruz, 50', Santa Cruz Co, Calif.
Oct. 4, 1933.

17. Great horned owl
18. Burrowing owl
19. Red tailed hawk (western)
20. Fish hawk
21. Red bellied hawk
22. Sparrow hawk
23. Sharp-shinned hawk
24. Turkey vulture
25. American crow
26. Yellow billed magpie
27. Calif. jay
28. Calif. valley quail
29. Mourning dove
30. Marsh hawk
31. Cooper's hawk
32. Red shafted flicker
33. Black phoebe
34. Wood pewee
35. Traill flycatcher
36. Redwing blackbird
37. Bi-colored blackbird
38. Western meadowlark
39. Willow goldfinch (Hall)
40. White crowned sparrow (Gamble)
41. Golden crowned sparrow
42. Nuthatch ( )
43. Song sparrow
44. Spotted towhee

Kaye - 1933

Santa Cruz, 50', Santa Cruz Co., Calif.
Oct. 4, 1933

45. Brown towhee
46. Tree swallow
47. Cedar waxwing
48. Calif. shrike
49. Yellow warbler
50. Lutescent warbler
51. Calif. thrasher
52. Bewick wren
53. Plain titmouse
54. Intermediate wren tit
55. Coast bush tit
56. Hermit thrush
57. Western bluebird.
58. Hutton vireo
59. Ring necked pheasant

Mammals

1. Deer
2. Coon
3. Skunk
4. Fox (gray?)
5. Jack rabbitt
6. Cottontail
7. Brush rabbitt
8. Douglas ground squirrel
9. Gopher
10. Harvest mouse

Kaye-1933

Santa Cruz, SO', Santa Cruz Co., Calif., Oct. 9, 1933.

11. White footed mouse
12. Meadow mouse
13. House mouse
14. Norway rat
15. Bats - silvery haired, ~~mexican free tail~~ - (little brown ?)

weasel, mink, coyote, and grey squirel also reported, but unverified.

Reptiles

1. Pacific rattlesnake
2. Garter snake
3. Alligator lizard
4. Fence lizard
5. other species of snake (other genera) reported, not verified

Amphibians

1. Hyla regilla
2. In general there seems to be a scarcity of amphibians. Two frogs or toads were seen by ranch hands, but were not procured or recognized.

Kaye-1933

Santa Cruz, 50', Santa Cruz, Co., Calif.
Oct. 4, 1933.

Habitats

1. Wild grape draw
2. Fallen timber
3. Standing timber
4. Wet slough
5. Lake
6. Open grassland - occasional oaks
7. Vineyard, orchard and other artificial habitats.
8. Aerial

I. Wild Grape Draw

Description: These draws are about 5 to 10 feet deep on the average, and are choked with elder berry overgrown with wild grape, giving a "clumpy" aspect to the vegitative topography. Wild parsley (now dry) fills the spaces between the clumps. The draws, for the most part, 50 to 100 yards wide, and extend for a mile or more across the land. Deer trails are common in these draws.

Animal life therein:

Birds: Calif. jay, hutton vireo, white & golden crowned sparrows,

Kaye - 1933

Santa Cruz, 501, Santa Cruz Co., Calif.
Oct. 4, 1933.

Bewick wren, Calif. Thrasher, wren tit, bush tit, spotted & brown towhees

Mammals: Deer, harvest mice, microtus, skunk, bush rabbit, cottontail

Reptiles: lizards & rattlesnake

II. Fallen Timber

Description: This is an area of about 8000 acres which used to be oak forest, but which two years ago was cut down and lift lying on the ground. It now makes an excellent habitat for quail, and jackrabbits. Many birds belonging more properly to other habitats are often found herein, near the edges of the area. In one or two places bands of standing timber cut across the ~~standing tim~~ fallen timber area. Wild grape draws extend into this area, running out from sloughs or lake.

III Standing Timber

Description: The standing timber

Santa Cruz, 501, Santa Cruz Co, Calif.
Oct. 4, 1933.

consists of oaks. The growth is not so dense or old. It being claimed that one of the old men on the ranch can remember the first of the forest oaks. Of course, there are large oaks on the ranch 100 years or older. Were these oak forests near a body of water, they are overgrown with lianas.

Woodpeckers, flycatchers, vireos, warblers, bush tits are the commonest of the birds in these oak forests. Squirrels, coon (near water) are the commonest of the mammals.

IV Wet Slough

Description: These are backwater sloughs from the lakes. The water is stagnant. Cattails & other weeds are at the edges, while willows and sycamores shade the slough. Also wild grape, & parsley help to tangle up the edges.

Warblers, goldfinches, flycatchers, great blue herons, kingfishers, green herons, ducks (wood) are

Santa Cruz, 50', Santa Cruz Co., Calif.
Oct. 4, 1933.

common out here. Deer, cow, skunk, microtus, peromyscus & reithrodontomys live in the tangle at the edge of the sloughs. I didn't see a single amphibian.

V Lake

Description: The lakes are all of the ox bow type - Eddy & Pubins lakes less noticeably so. Their edges are not so widely overgrown as are the edges of the sloughs. In most cases the the oaks grow right up to the edges of the lakes. Occasional cottonwoods are found. Some willows are also present.

Wood duck, mallard, sprig, ruddy ducks, white pelicans, kingfishers, gr. blue herons, little green herons, are busy at the water of the lake, which the birds of the slough are also found at the edges, plus wood peckers, jays, flickers, brown towhee, spotted towhee, titmouse.

Kaye - 1933

Santa Cruz, 50'; Santa Cruz Co, Calif.
Oct. 4, 1933.

VI Open Grassland

Description: Stumps or scattered oaks dot these grassed areas. The grass is dead now and about 1 ft. high. Squirrels, jack rabbits, and gophers, and a few birds, chiefly sparrows, woodpeckers, and blue birds, constitute most of the conspicuous animal life.

VII Artificial

Description: Orchards, vineyards, alfalfa fields, rice fields, yards etc. come under this category. Blackbirds, bluebirds, jays, magpies, killdeer, sparrows, pheasants, meadowlarks, are common

VIII Aerial

Note: Most all predacious birds, except the kingfisher may be found over all or any habitat. Bats are aerial, but stay near trees, or barns where they may hang up in daytime.

2

Walker Basin, Kern Co., Calif.

1933

MacKay, D. S.
1933

Walker Basin, Calif. pp. 40 – 126
Oct. 6 – Dec. 2, 1933

Specimens #154–452, belong to Acc. #4236, and are included in
Bird Catalog
Mammal Catalog: 59944–60325

Santa Cruz, Santa Cruz Co., Calif. pp. 127 – 135
Dec. 8 – 9, 1933
Summaries of Walker Basin expedition

For maps, see notes of R M Gilmore

S side Thompson Canyon, 3900', Walker Basin, Kern Co., Calif. Oct. 8, 1933.

153

154 Audubon Warbler spoiled - not saved wt: 12 gms.

✓155 Eutamias ♂ 250-110-35-21 wt: 73 - 4300 ft.

✓156 Eutamias ♀ 235-115-35-22 wt: 66 - 4300 ft.

✓157 Eutamias ♂ 245-115-37-20 wt: 67 - 4300 ft.

✓158 Citellus ♀ 400-150-56-26 wt: 500 3900 ft.

After spending the day yesterday running around the basin, we finally found this camping grounds. We are at the Soda Springs on Nick Williams' property in Thompson canyon, which is on the north side of the basin.

We got up early this morning, fixed up our camp, hunted and set out traps. Ray Gilmore collected my specimans, 155, 156, 157, & 158. 153, a big black lizard, I shot.

(1.) I set out 20 mouse traps amongst the sage on a sandy flat at the bottom of the canyon, elevation 3400 feet. (2) I set 10 mouse traps in the sage near this camp; (3) 2 rat traps in trees near camp for pack rat; (4) 15 mouse traps among rocks near camp; (5) and 10 mouse traps along the stream bottom near camp. (6) 5 traps I set in tall weeds next to camp.

aye - 1933

S. side Thompson Canyon, 3900', Walker Basin, Kern Co., Calif.
Oct. 9, 1933.

From trap line (1) I took 3 kangaroo rats + 3 peromyscus m. sonoriensis. From line (2) I got 1 kangaroo rat + 2 pero. m. s. From line (3) I took 1 pack rat. From line (4) I took 2 pero. m. s. and 1 peromyscus californicus From line (5) I got nothing. From line six I took 1 reithrodontomys megalotis, 1 pero. m. s. and 2 perognathus

I shot 1 cotton tail rabbit, 2 chipmunks, 1 bewick wren, 1 lark sparrow and 1 band tailed pigeon.

(Ears measured from notch.)

✓159	Neotoma f.	♂ wt: 265.5 -	350-165-37-32
✓160	Peromyscus c.	♂ wt: 33 gm. -	200-110-24-26
✓161	Dipodomys agilis	♂ wt: 67.5	280-155-44-20
✓162	Dipodomys agilis	♀ wt: 70	295-185-44-21
✓163	Reithrodontomys	♀ wt: 14	137-72-16-16
✓164	Sylvilagus audoboni.	♂ wt: 993	340-40-50-80
✓165	Dipodomys agilis	♂ wt: 80	310-190-46-19
166	Bufo	— — — — — — —	
✓167	Eutamias merriami.	♂ wt: 70	245-110-36-32
✓168	Eutamias merriami	♀ wt: 86.5	255-115-35-23

S Side Thompson Canyon, 3900', Walker Basin,
Kern Co., Calif. Oct. 10, 1933.

Last night I set 10 traps in tall grass next to our tent and caught 3 pero. m.s., and one reith. m. I set one rat trap in the barn and caught one kangaroo rat. I set 1 rat trap at the foot of a tree in which there was a pack rat nest, and caught one pack rat. I set 28 traps at random in fields of rabbitt brush scattered with rock outcrops. I caught two male pero. m.s.; 2 kangaroo rats; and one small pack rat in a mouse trap at least 50 feet from any rocks, and there were no pack rat signs in the nearest rocks.

✓169	Perognathus	♂	wt: 20	188-104-25-14
✓170	Neotoma	♀	wt: 230	360-175-38-36
171	Sceloporus		—	— — — —
172	Phyrnosoma (horned toad)		— —	— — — — —
✓173	Neotoma fuscipes	♂	wt: 123	310-150-35-30
✓174	Thomomys b.			
✓175	Microtus	♀	wt: 77	188-53-27-18
✓176	Dipodomys agilis	♂	wt: 76	310-185-47-17
✓177	Dipodomys agilis	♀	wt: 67	300-190-45-18
✓178	Dipodomys agilis	♀	wt: 63	290-178-44-17

S. side Thompson Canyon, 3900'; Kern Co., Calif. Oct. 11, 1933.

It rained quite hard yesterday afternoon, and some again last night. I had out 20 mouse traps in a rock and rabbitbrush habitat. I caught 3 pero. m.s., and one kangaroo rat; the latter was ruined by the large ants which are here. The wet night may be to blame for the poor catch.

Today the weather has been threatening, but tonight it is clear and cold.

I spent a great deal of time today hunting and looking the country over more thoroughly. I found a line of good pack rat nests in Basin Creek, and set eight traps there. I set out 5 gopher sets and caught one today. Ray caught another in an open field, and I put it up. I also set out 15 mouse traps in a sage-rabbit-brush association. The signs there are good for kangaroo rats.

I shot a cabanis hairy woodpecker and a plain titmouse out of a blue oak in mid-field and a slender billed nuthatch out of a blue oak on a high peak to the north + above here. I shot two killdeer (males) out of the wet field 100 yards downstream from camp.

Later, after I get to know this

S. side Thompson Canyon, 3900', Kern Co.,
Calif. Walker Basin- Oct. 11, '33.

section better I'll make a map showing the main topographic features here.

Today I also saw a grey squirrel which I didn't get a shot at. I saw no carnivor tracks or signs. I did see deer signs on the mountain to the north. I saw winter mole and gopher workings today from last winter. I also saw something else which may help to explain the shortage of carnivores hereabouts. I saw a large fish skeleton wired to a fence. Has someone been trapping carnivors here lately? We do know there was a government trapper in here last year. We have found coyote, grey fox and bob cat skeletons lying around which look as though they may have been trapped by this same trapper. Last night we heard what we took to be a fox howling. Dr. Grinnell, who has been with us since Sunday night (left at noon today), found an old brown bear skull with a bullet hole in it. By the way, Ray caught a large microtus in a trap yesterday afternoon - and I skinned it. We have not found shrew or grasshopper mice - as yet.

age- 1933

S side Thompson Canyon, 3900'- Walker Basin - Kern Co., Calif. Oct. 11, 1933.

We are beginning to get a line on the reptiles here. We have collected several species of sceloporous, one rattlesnake, one garter snake, numerous brown shouldered lizards, and one good horned toad. Among the amphibians we have numerous hyla - and one large toad (bufo). I caught the rattlesnake in a hole in a low cliff about 300 yds. downstream. To get it I had to shoot it, and had to do in such a way that its head and tail were ruined. It was 52 inches in length and therefore too large to preserve in toto. There are a very large number of lizards here, and a surprisely large number of amphibians.

The bird situation is well under way. We know pretty well what is here. Later just before we leave I'll make a complete list. However, there seem to be a lack of predacious birds. We have seen no buzzards and no crows, though we have seen and heard ravens. There are no red tails or any of the larger hawks - that is - we haven't seen them as yet. We have seen - among the hawks, only the Cooper & sharp-shinned.

Specimens for today are:

S. side Thompson Canyon, 3900', Walker Basin, Kern Co., Calif. Oct. 11, 1933.

179	Peromyscus m. sonoriensis.	♂ wt: 17	140-65-20-17
180	Thomomys b.	♂ wt: 98	200-70-27-8
181	Thomomys b.	♀ wt: 33	210-70-25-7

Oct. 12, 1933.

Today dawned bright and clear, and cold. A heavy dew during the night didn't keep the nocturnal rodents from moving about, because we got quite a few specimens in our traps. From my pack rat sets along basin creek I got two rats - an adult male and female. The latter had a big warble in her left shoulder. From my mouse traps in the sage I got two dipos, one peromyscus, and one neotoma. I got a very large gopher in a trap 20 feet from the tent. I got another gopher out of an open field. The gophers are molting now - red to dark?

I hunted up the ~~gopher~~ gray squirrel this morning that I saw yesterday. I found him - shot him three times, and finally being unable to knock him off the limb over which he was draped, I climbed up after him. I got him in my hands and started down with him, when he took a

S. side Thompson Canyon, 3900'; Walker Basin,
Kern Co., Calif. Oct. 12, 1933.

bite at my hands. I dropped him. He fell the 75 feet to the ground, squawked once, and got off into the brush before I could find him - or get down. I lost him.

This afternoon while we were skinning in the tent we heard a small, weak squeak. At first we thought it was a bird, but when it kept up for a steady hour we decided it wasn't. We finally traced it to the inside of the tent. Then I found it. It was a "teeny weeny" baby neither clinging to the bottom of a collecting chest and squeaking to beat the band. Lath Ray found another. We put them in formaline.

While setting out traps tonight I shot what I took to be a brush rabbitt, but which may only be a immature cottontail. I shot him in basin creek in the brush.

I set out three steel traps this afternoon - though I believe I'll catch nothing.

I didn't notice so many reptiles - lizards around today. Perhaps the colder wet weather makes them less active - even though the sun shone brightly all day. I saw more running around when the sky was overcast, and the air was warm and stuffy.

Saw a red tail hawk today.

ye - 1933.

S. side Thompson Canyon, 3900', Walker Basin, Kern Co., Calif. Oct. 12, 1933.

182	Thomomys	♂ wt: 153 gm. 220-70-30-8
183	Thomomys	♂ wt: 208 - 245-68-30-8
184	Peromyscus	♀ wt: 23 156-72-20-18
185	Neotoma	♂ wt: 234 360-165-37-38
186	Neotoma	♀ wt: 217 365-185-85-34
187	Thomomys	♂ wt: 206 - 206-55-26-7
188	Peromyscus	♂ wt: 23 150-65-18-18
189	Dipodomys a.p.	♂ 320-190-46-21 wt: 91 gm.

Oct. 13, 1933

190	Perognathus	♀ wt: 23, 190-110-26-13
191	Perognathus	♂ wt: 18, 180-100-24-12
192	Peromyscus truei	♂ wt: 28, 192-100-24-26
193	Peromyscus truei	♀ wt: 29, 190-105-23-27
194	Peromyscus	♀ wt: 24, 190-100-21-20
195	Microtus	♂ wt: 66, 180-58-25-17
196	Neotoma f.	♀ wt: 161, 325-165-36-30
197	Neotoma f.	♀ wt: 195, 365-180-35-31
198	Sylvilagus	♂ wt: 595, 305-35-78-68
199	Dipodomys a.	♂ wt: 66, 305-185-46-19

This has been an interesting, and perhaps, an eventful day. My trap record first: From my traps in the tall grass next to the tent I got 1 reithro, 2 peros, and one microtus. From my 15 traps in the sage and rabbit brush I got 1 dipo, 2 perognathus, 2 peromyscus. From my 8 traps in the rocks

S. side Thompson Canyon, 3900 ft., Walker Basin, Kern Co., Calif. Oct. 13, '33.

I got 2 rock mice and 1 peromyscus. From my pack rat traps along Basin Creek I got 1 pack rat. From a trap which I had left set in a tree from which I had already caught a male pack rat, I caught a female pack rat. From 4 traps which I has set on a rocky-steep cliff overlooking Basin Creek I caught a mouse which we can't identify for sure. (See No. "194" on previous page for measurements.) It looks something like a truei, yet the ears are far too small.

The rabbitt which I shot last night has prooved to be a problem. It seems to me to look more like a brush rabbitt than a cottontail. Ray says it may be a young cottontail. Perhaps, but it acts more like a brush rabbitt. Maybe I should have said "acted." I found it in heavy brush along basin creek where there was no water. It was quiet, and just hopped a little further in when I came along. Cottontails generally come out of the brushy bottoms in the evening. Also when flushed out they run like "—". This rabbitt I shot exhibited none of the actions of

S. side Thompson Canyon, 3900', Walker Basin-
Kern Co., Calif. Oct. 13, 1933.

cottontails. I'll try to get some more.

I shot 3 bats (pipestrellus) tonight. They have only a short hunting time in the evening. They come out all at once. There were none in the air - then all of a sudden they were all there, flying everywhere. They came out about 20 minutes after sunset, and stayed out perhaps 15 minutes. "Then all of a sudden" they were all gone again.

Ray shot a jackrabbit tonight, the only one we've seen. The rabbits seem to be conspicuous by their absence. We've seen only four cottontails, and have collected only two - and one brush rabbit (?).

We saw a marsh hawk today, and I saw a flock of about fifteen crows.

I just went out to look at my traps. Whoopee! I got a shrew! I got him in the grass next to the tent. From this same little 20 by 20 patch I have taken perognathus, peromyscus, reithrodontomys, microtus and sorex.

✓200 Sorex ♂ wt: 5 gms. 90-43-7-6.5

S. side Thompson Canyon, 3900', Walker Basin, Kern Co., Calif. Oct. 14, 1933.

201 Sceloporous Shot with aux.

Trap record: From 20 traps in sage and rabbit brush collected 4 dipos, 2 peromyscus, 1 perognathus. From 8 traps in rocks got 2 rock mice. From 4 traps on cliff overlooking Basin creek got 2 rock mice and 1 perognathus. From pack rat traps in Basin creek got 2 pack rats. Found a dead dipo lying in garden next to tent. Shot 1 grey squirrel from top of digger pine in Basin creek. Shot 1 lark sparrow, 1 brown towhee from blue oak near camp. Shot nutall (?) woodpecker from digger pine near camp. Shot cooper hawk from digger pine in Basin creek, but couldn't find it.

✓ 202	Perognathus	♂ wt: 26	205-120-26-13
✓ 203	Perognathus	♂ wt: 23	190-115-25-11
✓ 204	Peromyscus trvei.	♂ wt: 23	190-105-23-25
✓ 205	Pipistrellus	♂ wt: 3	58-18-5-9
✓ 206	Peromyscus trvei.	♀ wt: 21	195-100-22-24
✓ 207	Reithrodontomys	♀ wt: 16	155-80-18-14
✓ 208	Peromyscus trvei	♀ wt: 40	210-105-24-25
✓ 209	Dipodomys agilis	♂ wt: 75	330-200-48-19
✓ 210	Sciurus griseus	♂ wt: 845	560-280-74-35

S. side Thompson Canyon, 3900 ft., Walker Basin, Kern Co., Calif. Oct. 14, 1933.

211	Neotoma fuscipes	♂ wt: 260	375-165-38-39
212	Neotoma fuscipes	♂ wt: 264	400-190-36-38
213	Dipodomys agilis	♂ wt: 79	300-175-45-19
214	Dipodomys agilis	♂ wt: 71	305-190-44-17

Today was a big work day. However, we did manage to get out for a few minutes this evening.

I went back to the digger pines in Basin Creek where I saw the bats last night. They came out again tonight at about the same time, and about ten to 15 minutes later they all disappeared again. To correlate it – they disappear about the time the first frog croaks. They don't operate very far from the trees, never getting too much in the open.

Tomorrow I'm going to take a little larger and try to get some of the more difficult specimens to obtain. I'm going over the ridge.

Oct. 15, 1933.

215	Sorex	♂ wt: 4.5 gms.	95-40-7-7
216	Microtus	♀ wt: 101	210-63-23-16
217	Microtus	♀ wt: 87	200-62-23-17
218	Peromyscus truei	♀ wt: 30	200-105-24-26

S. side Thompson Canyon, 3900', Walker Basin, Kern Co., Calif. Oct. 15, 1933.

I did not reset my traps last night, so my catch was accordingly small this morning. I caught four dipos & one peromyscus maniculatus, all out of sage-rabbit-brush association.

I spent the whole morning hunting. I hunted up basin creek, and then up and over the rocky ridge. I shot a male quail out of a flock feeding on a ledge at the edge of basin creek. I shot a nutall woodpecker out of a digger pine at the edge of the creek. I shot a spotted towhee + a western warbling (?) vireo out of willow brush in the creek. Off a rock on the side of the rocky mountain I shot a rock wren. I shot a plain titmouse out of a blue oak on the top of the ridge. I shot a poor will flushed out of the rocks on the hill slope. I shot a fox sparrow out of some scrub oak on the top of the ridge.

Back in the creek I shot a male hairy woodpecker out of a digger pine. and a junco out of a cottonwood. Lastly I shot a slender billed nuthatch out of a digger pine near the creek.

Birds that I saw but didn't get

S. side Thompson Canyon, 3900', Walker Basin, Kern Co., Calif. Oct. 15, 1933.

were pinon jay, an unknown hummingbird, an unknown (long eared or short eared) owl, and the common: Calif. jay, blue-bird, brown towhee, red tail hawk, killdeer, flicker, red breasted sapsucker, green backed goldfinch, and white crowned sparrow.

I also saw many mammals, 1 cottontail rabbitt, 1 jack rabbitt, several chipmunks, and a large 5 point buck deer. I scared the deer out of the rocks at the top of the ridge. He ran a few feet, then stopped and looked at me. I could have got him with my shotgun. I would guess his weight to be 160 lbs.

This afternoon I set out steel traps (4) for rabbitt under the willows in basin creek, and I also set out 5 rat traps for chipmunks among the rocks and logs in basin creek. I have taken up all my mouse and gopher traps with the exception of those at camp. This evening I shot a female grey squirrel, one tibmouse, and one pipistrellus.

No. "215", the Solex, was trapped by R.M. Gilmore, along with the microtus under willows in grass. He got the three also.

S. side Thompson Canyon 3900', Walker Basin, Kern Co., Calif. Oct. 16, 1933.

✓ 219	Perognathus	♂ wt: 30	210-120-27-19
✓ 220	Peromyscus ~~crinitus~~ boylei	♂ wt: 25	185-100-22-20
✓ 221	Microtus	♀ wt: 79	195-58-23-17
✓ 222	Pipistrellus	♂ wt: 3.5	60-20-3-10
✓ 223	Eutamias	♀ ♂ wt: 77	250-115-35-20
✓ 224	Neotoma fuscipes	♂ wt: 292	375-175-37-30
✓ 225	Sciurus griseus	♀ wt: 816	575-280-78-39

Specimens "219, 220, 221, + 224" were trapped by R. M. Gilmore.

My own traps produced practically nothing today. I did catch a perognathus in a steel trap. I caught a ground squirrel in a steel trap this afternoon.

I shot a young male grey squirrel this morning. And, while skinning the female this afternoon that I got last night I discovered it was, or is, the same one which I shot several days ago. I found numbers of No. "12" shot under its skin. Also, I shot a chipmunk this morning. I forgot to mention that I have now collected every grey squirrel I have seen.

There seems to be a shortage of mammals here, numbers of individuals, that is. The rodents are quite well represented as to genera and species, but there seems to be but a few of each kind.

The bats didn't come out tonight. I

S. side Thompson Canyon, 3900 ft., Walker Basin, Kern Co., Calif., Oct. 16, 1933.

didn't see a one tonight.

Ray got a new species of birds for the camp today, and saw two other new species further down the canyon. He shot two Alaskan (?) hermit thrushes in the willows near camp. He saw a pair of prairie falcons down in the basin, and he shot a mourning dove 300 yds. below the camp.

Oct. 17, 1933.

I got two new species of birds ~~from~~ for the camp today, a stellar jay, and a red naped sapsucker. I shot the jay out of a blue oak at the edge of basin creek. I shot the sapsucker out of a locust tree here at camp. Also I shot two ruby-crowned kinglets out of willows in basin creek.

My basin creek trap line yielded nothing. However I got a dipo out of my traps in the grass near the tent. That makes <u>seven</u>! genera that I've taken out of a space 20 by 20 feet!! I also caught two reithros in the same place.

✓ 226 Reithrodontomys ♀ wt: 11 135-71-17-15

✓ 227 Dipodomys agilis ♂ wt: 72 310-190-46-16

S. side Thompson Canyon, 3900', Walker Basin,
Kern Co., Calif. Oct. 17, 1933.

228	Peromyscus m. sonoriensis	♂	wt: 19	152-75-20-19
229	Reithrodontomys	♀	wt: 15	150-81-17-15
230	Citellus beecheyi	♂	wt: 569	420-171-55-30
231	Dipodomys agilis	♀	wt: 78	310-189-46-19

Right after I wrote the last note I went out and shot a cedar waxwing from a willow near the tent. And I also shot a golden crowned sparrow which I had noticed in the willows. I first noticed it when I saw an unfamiliar movement.

Right after lunch Ray and I walked up a canyon in which he had set some traps for chipmunks. He caught nothing. I shot a female ruby-crowned kinglet, a slender-billed nuthatch and a ground squirrel. I noticed many titmouses and nuthatches together in the same set of blue oaks.

This evening I shot a female Williamson sapsucker out of a blue oak about 100 yds. from Basin creek. The sun had already gone down. The makes all three of the sapsuckers of the western U.S. that I have shot here. I'll try to get the male tomorrow. I also shot a sparrow hawk out of a blue oak tonight, after the sun had gone down.

Thompson Canyon, Walker Basin —
Oct. 18, 1933.

232	Microtus	♂ wt: 91	195-63-23-20
233	Peromyscus m.s.	♀ wt: 18	132-55-20-17
234	Reithrodontomys	♂ wt: 10	128-78-17-13
235	Sylvilagus	♂ wt: 710	315-50-82-77
236	Eutamias	♂ wt: 62.5	232-188-36-21
237	Eutamias	♂ wt: 64	232-112-35-21
238	Bufo		
239	Pituophis cateniter		
240	Hyla		

I only caught one peromyscus and one reithro in my eight traps here in the grass last night. I caught nothing in my steel or chipmunk sets.

I hunted all morning, but didn't get any new species. I collected an Audubon Warbler, a plain titmouse and a cedar waxwing. I spent a lot of time trying to get a marsh hawk which I raised out of Basin Creek. I never did quite catch up with him.

After I got back to camp, and found that Ray had brought in a Townsend solitaire and a mountain quail, I went up to the top of the ridge. Imagine my surprise when a gigantic bird glided over a rock at me. I shot without thinking. The No. "6s" had no effect on this bird, other than to turn it away. There were a pair of the birds, and they were at least twice the size of

Thompson Canyon, Walker Basin—
-Oct. 18, 1933-

a buzzard. As they went away from me I saw, distinctly, white, but whether on wings or tail I couldn't tell. The general color was black. I know they weren't buzzards. So I have figured out since that they must have been condors. Their size was awesome. The locality was good for condors: a high rocky mountain top, overlooking the whole of Walker Basin.

I went out again this afternoon. I saw a pair of Lewis woodpeckers sitting on top of a digger pine - a ~~dead~~ dead one. After considerable difficulty, I finally got one. Contrary to many of the small birds, (wrens, titmouses, etc.) the Lewis woodpecker seeks a high perch commanding a wide field of vision, when evading danger. He watches for it, and never lets it get near.

Also this evening I got a 42 inch gopher snake, a large toad, and a hyla. Ray also got a gopher snake.

Ray says that he thinks he saw a flock of Blackbirds today, and he also believes he saw a butcher bird. Tomorrow will try to collect some, if they are here.

Thompson Canyon, Walker Basin,
- Oct. 19, 1933 -

241	Sorex	♀ wt: 3.5	107-42-12.5-9
242	Sorex	♀ wt: 3.5	107-42-12-9
243	Reithrodontomys	♂ wt: 10	140-78-18-14
245	Neotoma	♂ wt: 292	420-210-40-33
246	Eutamias	♂ wt: 72	242-105-36-22
247	Sylvilagus	♀ wt: 782	380-65-88-84

I caught nothing in traps in the grass here at camp. Am I at last emptying that small area of mammals! I caught a fine pack rat in a trap I had set for chipmunk in the bottom of basin creek. It's a dry, brushy bottom, and there are pack rat nests near.

I shot a chipmunk off some rocks at the edge of the creek. I shot a pine siskin off some rabbitt brush at the edge of the willow thickets. I shot a lark sparrow and a purple finch off a tall willow. I shot another purple finch and a stellar jay out of a digger pine. I shot two redwing blackbirds out of a flock of five which were in the reeds above ~~a~~ camp. Ray shot a funny red-wing blackbird. It had an elongated upper mandible.

I raised out a marsh hawk and a red tail from the creek, but didn't get a shot at them. I did shoot a cottontail from the creek, and a lutescent warbler from willows near camp.

Thompson Canyon Walker Basin
- Oct. 19, 1933. —

I saw two red breasted sapsuckers "making love" this morning. They were going up the trunk of a small digger pine, crying "plaintively" and pecking gently at each other. They kept it up for quite a while. Incidentally, I saw about 8 of these birds this morning.

We had a visit from a Mr. Stubblefield this afternoon. He lives in Haile canyon near Havitah. He was looking for Mr. N.J. Williams. He tells us that there are condors here, and that there is a bald eagle here. He says also that there is a very large "grizzly" bear here. He says it isn't the true grizzly, but a bear known around here as "silvertip grizzly". He says its tracks have been seen several times, and that it has an eleven inch track. He says, of course, that there are numerous brown bears here-abouts.

Oct. 20, '33.

✓ 248	Microtus		♀ wt: 62.5	192-56-24-19
✓ 249	Microtus		♀ wt: 60	173-50-22-18
✓ 250	Canis lestes	"pick up"	skull only	
✓ 251	Eutamias	"	" "	♂

Thompson Canyon - Walker Basin
Oct. 20, 1933.

This is our last day in this camp. Tomorrow we are going to shift camp to Piute Mt.

Ray hunted in basin creek with me this morning, but neither of us had much luck. I shot only a male purple finch. In one digger pine on the ridge I saw about 8 stellar and 12 Calif. jays. I saw the Jack snipe in camp again this morning. I also saw a dove here this morning, the first time I've seen one here.

My traps in the grass patch at last have failed to bring in anything. This grass patch of which I have spoken, is, to the naked eye, nothing but tall, dead, wild parsley. But on looking closer two 6 inch rivulets (running water) may be seen on the ground they are edged with green grass and short, 14 inch reeds. It formed a permanent habitat for at least — neithrys and peromyscus. It also was visited more or less often by microtus, dipodomys, perognathus, sorex, and thomomys.

Basin Creek proved to be a good hunting ground for both birds and mammals, and should we spend another week here

Thompson Canyon Walker Basin
Oct. 20, 1933.

we would probably many other new birds. Almost every trip to the creek produced new specimens. Basin creek is dry above a point directly north of here. A big open space between here and the creek has several hot springs in it. It is the water from these springs which starts the water in the creek. There is also a large spring about 75 yards above our camp which flows into Basin Creek about a mile below. Digger pines and willows are the chief vegetation of the creek bottom, while occasional jeffrey pines, yellow pines and cottonwoods fill in. The spaces on either side are characterized by a blue oak, rabbitt-brush association.

We have taken a pretty fair representation of mammals from here, as the census sheet shows. Dipos are more common ~~that~~ than peromyscus. Pero. m. sonoriensis is the most common of the three species of peromyscus here. We took 10 specimens of pero. truei, which, I believe, is rather good. We only got ~~on~~ three critters, if ~~that is a~~ they ~~are~~ critters. Phrognathus are scarce, and were found in almost every vegetative association.

Thompson Canyon Walker Basin,
Oct. 20, 1933.

Gophers were taken chiefly in open fields, near water. We saw very few gopher workings on the hillsides. There is apparently only one genus of bat here, the pipistrellus, and there are not too many of those. Sorex, of which we have taken four, seem to avoid the areas in which there are other mammals. We never got them until after we had caught most of the other mammals out first. Reithros occur more thickly in given areas than the dipos, but are not found in near so many habitats. The reithros we got out of grass only, and only from the grass near camp. Carnivores occur here in great numbers, but not this year. The government trappers in here last year just about cleaned them out. Coyotes, fox, and bob cat were the most common, with less skunk, bear and deer. We were unable to obtain any trace of weasel. Any occasional mountain lion is reported, and there is some reason to believe that opossum have gone through here. Coon have been seen occasionally.

The most interesting mam-

Thompson Canyon Walker Basin
— Oct. 20, 1933. —

mal in here is the wood rat; of which we have taken thirteen specimens. All those which we have taken, with one exception, were taken either in trees nests, or from nests in brushy creek bottoms. All over the hillsides, in every rock pile, are many, and abundant signs of pack rat, but in no case were we able to take one from the rocks. The "one exception", I took in the middle of an open field. Apparently, the wood rats have all migrated, at once, from the rocky hill sides to the stream bottoms.

Microtus were taken only in the grass near camp, and under the willows in the creek bottom near camp.

French Meadows, Piute Mountains,
Kern Co., Calif. Oct. 22, 1933

This is our first day here. We got in last night and set up camp at the upper part of the meadows. Before I go ahead with notes of this camp, I want to say that I shot a raven yesterday about a mile & a half south of Piute out of a dead blue oak. I shot a red tail hawk one mile south of Piute out of a scrubby tree.

✓252 Raven - wt: 980 gms. Skull
1½ mi. S. Piute, Kern Co., Calif. Oct. 21, 1933.
No other ravens near. Taken from dead oak.

From French Meadows, in an open, grassy field, I took today a

✓253	Thomomys	♀ wt: 104	205-60-28-7
✓254	Microtus	♂ wt: 64.5	187-60-23-18
✓255	Microtus	♂ wt: 58	182-60-24-18
✓256	Thomomys	♀ wt: 110	215-68-28-8
✓257	Eutamias	♂ wt: 69	240-110-36-20

The eutamias was shot by R. M. Gilmore. The rest I caught in traps. I set six gopher sets, as stated, and 15 microtus traps along the edge of willow lined streams originating in springs near camp. I caught three microtus a half hour after setting the traps. I also set 10 traps in rocks, and under logs on the side of the hill. I set out three pack rat traps in willow nests along the stream. I set

French Gulch, Piute Mts.,
Oct. 22, 1933.

3 traps around a cabin in an open meadow. And I also caught another gopher just before the sun went down.

French Meadows, or Gulch, as it is called on the maps, are, or more properly, is, a meadow ~~at~~ with an elevation of about 6700 feet set down in the bottom of a canyon. The ridge to the west reaches a peak of 8300 feet; the ridge to the east reaches an elevation of about 7500 feet. The zone is typical Transition. The mountain sides are covered with yellow pine, black oak formation; and with a manzanita, sage association underneath. The slopes are all rocky; granite chiefly, but with a zone of metamorphics cutting in on the higher, ~~eas~~ western side. The meadow is open grassland, with three small willow lined creeks flowing south through it, and each originating in springs near the northern end. The upper canyon drainage enters the meadow above, dry now, but merging with the spring creeks near the middle of the meadow. The meadow grass is about 18 inches tall

French Gulch, 6700 ft, Piute Mts.,
- Oct. 22, 1933. -

where engraved. Our camp is on the line of the pines and the meadows at the northwest corner of the meadow. The birds which we have seen today are listed in the regular list in front.

Oct. 23, 1933

From my traps this morning I caught sixteen peromyscus, 2 gophers, and one chipmunk. 12 of the peromyscus, probably, maniculatus, were taken in my microtus runway sets along the stream and by the cabin. The other 5 peromyscus, probably crinitus were taken from the rocks and logs.

258	Eutamias	♂ wt: 70	242-105-35-21
259	Thomomys	♀ wt: 100	210-65-28-7
260	Peromyscus (~~c~~ boylei rinitus?) "	♂ wt: 24	196-108-24-20
261	Peromyscus (crinitus?) boylei	♀ wt: 31	193-104-23-20
262	Peromyscus (crinitus?) "	♀ wt: 29	206-108-23-20
263	Peromyscus (crinitus?) "	♂ wt: 24	186-99-23-20
264	Peromyscus maniculatus	♂ wt: 17	160-76-21-18
265	Peromyscus maniculatus	♂ wt: 18	146-70-20-15
266	Peromyscus maniculatus	♀ wt: 17	153-72-19-18

French Gulch, 6700 ft., Piute Mts.,
- Oct. 23, 1933. -

I climbed the eastern ridge this morning and shot a pygmy nuthatch, a purple finch and a fox sparrow. Down in the meadows I shot a golden-crowned kinglet, a robin and an evening grosbeak. Also here I shot a meadowlark and a plain titmouse. The latter I shot from a willow along the creek. The grosbeak was in the company of 4 others, and was also taken from the willows along the creek. Likewise the golden crowned kinglet was taken from the willows.

I set out a coyote trap in the meadow this evening and brought in a few of my other traps. Ray shot a varied thrush on the western ridge.

The temperature was below freezing this morning, reached a peak of 84° in the tent in mid-morning, and was back to 55° by sundown.

Oct. 24, 1933.

My traps yielded almost nothing this morning, 2 microtus', one gopher, 2 peromyscus crinitus, & one maniculatus. I shot 3 chipmunks, breaking the skull of 2 of them. Ray shot a brush rabbit from

French Gulch (Meadows), Piute Mts.,
Oct. 24, 1933.

the willows, a record. He also shot a mourning dove, a grosbeak, and a spotted towhee. I shot a sharp shinned hawk from the top of a digger pine, a junco, and a green tailed towhee. I heard the call of the towhee first, and though I hadn't seen the bird, I knew the call though; so I sat and waited in the bottom of the willows. I waited about 20 minutes, then saw him, too close for a good shot; so I backed up as far as I could and shot. The bird is pretty well ruined. I doubt if Ray can save it. I found good tracks up the west canyon this morning; of course, coyote and bobcat. I'm going to run a line of traps up there tonight. I'm not going to write too many notes now (its morning), I've got too much to do.

267	Microtus	♂	wt: 60	162-50-24-16
268	Microtus	♀	wt: 60	180-60-23-15
269	Sylvilagus bachmani	♂	wt: 499	315-48-75-63
270	Sciurus griseus	♀	wt: 687	570-290-73-36
271	Peromyscus (crinitus?)	♂	wt: 25	200-103-22-19
272	Peromyscus (crinitus?)	♀	wt: 27	200-112-21-19
273	Thomomys bottae	♂	wt: 83	197-60-26-6

French Gulch, Piute Mts.,
Oct. 25, 1933.

Trap record: My steel traps were untouched. I caught one pack rat in a trap in which I had already caught two chipmunks. I caught two microtus, one a juvenile. I caught one boylei (?) and one maniculatus.

274	Eutamias	♂	wt: 62.5	240-110-33-17
275	Eutamias	♂	wt: 65	236-107-36-19
276	Microtus	♂	wt: 66	180-62-25-16
277	Microtus	♂	wt: 38	157-57-23-18
298	Microtus	♀	wt: 35	150-47-21-15
279	Neotoma fuscipes	♂	wt: 290	373-163-38-30
280	Peromyscus boylei	♂	wt: 23	190-102-22-19

Coming back from my steel traps this morning I shot a junco and two slender-billed nuthatches.

I have found very good, fresh skunk tracks up the canyon aways, and I have added a couple of more steel traps to include that territory.

There seem to be lots of birds and mammals here, but they are very hard to get. For instance, the nuthatches work so high in the pines that they are out of range. The mammals are similarly hard to get. The pack rats seem to be scarce. Yet there are about 10 fresh nests among the willows. So fresh that

French Gulch, 6700 ft., Piute Mts.,
Oct. 25, 1933.

The twigs and leaves are still green, and though each nest now has its traps, I have been able to catch but one pack rat.

Oct. 26, 1933.

My traps brought next to nothing this morning. I caught one boylei from my meadow-creek line. I caught nothing in my steel traps. From my rat traps in the fir high up on the slope I caught a new kind of chipmunk. I shot a fox sparrow, a red-breasted nuthatch, up the west canyon, the former from ceanothus, and the latter from a yellow pine, and from the willows in the meadow I shot a goldfinch, and from a flock flying over the meadow I shot a cedar waxwing.

I set two more rat traps, and six mouse traps, also two steels, more up the west canyon this morning. Those rat traps and 4 mouse traps are in the north facing slope of white fir, and the rest of the traps are in the canyon bottom. The firs are at an elevation of about 7500 & 8000 feet.

French Gulch, 6700 ft., Piute Mts.,
Oct. 26, 1933.

281	Eutamias quadrivittatus (?) amoenus (?)	♂ wt: 65	215-85-33-21
282	Eutamias merriami	♂ wt: 67	260-125-34-19
283	Microtus	♀ wt: 68	194-62-24-18
284	Microtus	♂ wt: 64	188-60-24-15
285	Microtus	♂ wt: 64	190-56-24-16
286	Peromyscus maniculatus	♂ wt: 17	153-70-18-17
287	Neotoma fuscipes	♀ wt: 198	355-170-38-33

Oct. 27, 1933.

I had another bad morning: I didn't catch anything in my steel traps. Out of six gopher sets I made in the meadow last night I caught 3 gophers this morning. I caught one microtus, and one sonoriensis in my meadow-creek line. I caught one eutamias merriami, up the west canyon in the rocks, and one peromyscus boylii & one sonoriensis in the firs up the west canyon. I shot two more eutamias merriamis, and a golden-crowned kinglet in the west ridge. From the lower meadows I shot a hermit thrush, a spotted towhee and pygmy nuthatch. I shot a grey squirrel here at camp from the top of a pine, but couldn't find him.

French Gulch, 6700 ft., Piute Mts.,
Oct. 27, 1933.

I saw many band tailed pigeons today; many pygmy nuthatches, and a good sized flock of mountain quail. Besides these I saw the usual run of juncos*, jays, flickers, woodpeckers, chicadees, purple finches, grosbeaks, sparrows, and bluebirds. Ray shot a eutamias quadrivittatus up the canyon, among rocks, and in the same locale with the merriami chipmunk.

Last night I had the unique experience of finding a bird which I had shot three days ago, and which I could not find at the time. The bird was an evening grosbeak, male.

For some reason we have been unable to get any more brush rabbits. Ray has traps set where he took the first one, and where I ~~set~~ saw another, but they have caught nothing. Though he hunts there both morning and evening he has been unable to even see another.

288	Eutamias merriami	♂ wt: 67.5	240-105-36-21
289	Eutamias merriami	♂ wt: 67	255-115-35-21
290	Eutamias merriami	♂ wt: 69	240-100-36-22

French Gulch, 6700 ft., Piute Mts.,
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✓291	Eutamias quadrivitattus	♂ wt: 54	215-87-33-19
✓292	Microtus	♂ wt: 87	211-69-24-16
✓293	Microtus	♀ wt: 67	200-65-23-16
✓294	Peromyscus boylei	♀ wt: 24	196-101-22-19
✓295	Peromyscus m. sonoriensis	♂ wt: 16	146-65-19-17
✓296	Thomomys	♀ wt: 91	190-55-28-6

-Oct. 28, 1933-

We have found out now why specimens are so hard to get out of here. Mr. Woods, who lives in the ranger cabin at the lower end of the meadow says that most of the mammals have been poisoned out in the past two months. That explains a good number of things; the empty pack rat nests for instance. This is probably the story, as near as can be told from available facts.

Some time ago, just previous to the poisoning, and co-incident with the migration of neotoma in Thompson canyon, all the neotoma in the hills surrounding the meadows, migrated down to the willow lined ~~low~~ creek of the meadow. ~~No sooner than~~ They had no more than commenced to build

French Gulch, 6700 ft., Piute Mts.,
-Oct. 28, 1933.-

their nests than the poison campaign wiped them out, or nearly so. ~~They~~ The meadow and particulary the ~~empty~~ homes of the neotoma, now being bare of life, offered a good inducement to the chipmunks on the hills. So, in turn, a good many of these moved down into the meadow, and into the empty pack rat nests. I have trapped three chipmunks from the entrances of pack rat nests, and have seen several other run into nests. The chipmunks have taken over the nests as they were, without improving on them. However, there are a few neotoma left, as we have taken three.

According to Mr. Woods there used to be a good many dipodomys in here previous to the poisoning. Ray found a dipo tail this morning, but no fresh signs. Apparently the poison, got mostly, the neotoma and dipos. The meadows are overrun with gophers and microtus now.

Trap record: From my meadow creek trap line I took two microtus, one chipmunk (merriami) and one gopher. From my west canyon line I

French Gulch, 6700 ft., Piute Mts.
- Oct. 28, 1933. -

Took one eutamias merriami, (in rocks); 3 peromyscus boylei (one in creek bottom, + 2 in firs); bait taken from one steel trap.

I shot one eutamias merriami in the fir belt, and two eutamias quadrivittatus in the fir belt. I shot one pygmy nuthatch, one red breasted nuthatch, and one slender-billed nuthatch. Also I shot two townsend solitaires. Ray shot, among other things, a jack snipe and a male williamson sapsucker.

I took a bird census this morning; including only the birds seen in the narrow west canyon where my traps are.

Census:

		total
1. Mt. quail	25, 6 - 10	41
2. Band tailed pigeons		18
3. Chicadee		4
4. Juncos		6
5. Golden eagle		1
6. Purple finch		20
7. Ebichii		6
8. Hairy woodpecker		2
9. Calif. "		5

French Gulch, 6700 ft., Piute mts.
- Oct. 28, 1933. -

10. Townsend solitaire - - - - - - - - - - - - 2
11. Pygmy nuthatch - - - - - - - - - - - - 13
12. Red breasted " - - - - - - - - - - - - 4
13. Slender billed " - - - - - - - - - - - - 1
14. Raven - - - - - - - - - - - - - - - - - - 11
15. Bluebird - - - - - - - - - - - - - - - - - 6
16. Stellar jay - - - - - - - - - - - - - - - 4
17. Fox sparrow - - - - - - - - - - - - - - 3
18. Hermit thrush - - - - - - - - - - - - - 1
19. Spotted towhee - - - - - - - - - - - - - 1
20. Unknown - - - - - - - - - - - - - - - - - 2

Note: Heard birds which I couldn't see. Did not enter in census even if I knew call

✓ 297 Eutamias quadrivitattus ♂ wt: 68 225-100-33-21
✓ 298 Eutamias quadrivitattus ♀ wt: 68 212-92-36-21
✓ 299 Eutamias merriami ♂ wt: 65.5 246-111-38-21
✓ 300 Eutamias merriami ♂ wt: 63 240-110-39-21
✓ 301 Thomomys bottae ♀ wt: 78 200-66-26-5

- Oct. 29, 1933 -

Trap record: From my meadow - creek line I caught only a gopher. From my canyon line I caught a Eutamias merriami and a Peromyscus sonorensis

I shot two Eutamias quadrivitattus and two Eutamias merriami from fallen fir logs up the canyon. I shot one

French Gulch, 6700 ft., Piute Mts.,
- Oct. 29, 1933 -

western winter wren, one audubon warbler, one junco + one varied thrush. The wren I shot from fir logs in the same place that I got the chipmunks. The warbler I shot from willows in the canyon, the thrush from willows + fir, and the junco from a black oak on the hillslope.

Incidentally all four of the chipmunks I shot in the same place from the same set of logs. I shot all four without moving my position. There were about 8 chipmunks to be seen at one time, 3 of which were quadrivs. I have never seen a quadriv. out of the fir belt.

✓302	Eutamias quadrivitattus	♂ wt: 62	210-90-35-20
✓303	Eutamias quadrivitattus	♀ wt: 64	210-88-35-21
✓304	Thomomys bottae	♀ wt: 82	185-59-25-6
✓305	Thomomys bottae	♂ wt: 107	211-63-27-5
✓306	Microtus	♂ wt: 82	205-69-23-17
✓307	Microtus	♂ wt: 81.5	214-70-23-16
✓308	Peromyscus maniculatus	♀ wt: 20	155-70-18-17

- Oct. 30, 1933 -

This has been another interesting morning, scientifically. First of all I got another

French Gulch, 6700 ft., Piute Mts.,
- Oct. 30, 1933. -

new bird to the expedition, a white headed woodpecker. I shot him out of a black oak up the west canyon, at an elevation of about 7500 feet. I also shot a Hermit thrush.

I shot one grey squirrel, two ground squirrels and six chipmunks. The chipmunks are the big interest of the day.

I went back to the same place where I got the chipmunks yesterday. In order to better understand the story, it would be well to first describe the setting. The north facing slope consists of red fir only. The south facing slope consists of yellow pines and black oak. The fir slope is smooth, a metamorphic shaly slide, covered with needles. On this side near the bottom of the creek are many fallen fir logs, two of them bridging the creek to the pine-oak slope. The latter slope is rocky, with many small, overhanging rock-ledges. So much for the description.

Yesterday both the quadrivittatus seemed to be mixed up in the bottom of the creek with, perhaps, a seeming tendency of the quads. to keep to the fir slope

French Gulch, 6200 ft., Piute Mts.,
- Oct. 30, 1933. —

and the merriamis to the pine-oak slope. Today, when I sneaked up on the scene, all the quads were ~~mixed up~~ on the fir slope only, and all the merriamis were on the pine-oak slope only. I chased, and saw several quads run into small holes in the base of the fir trees, while on the other slope, all the merriamis ran into ground holes under the rock ledges. So summarizing we may conclude that all the quadrivittatus live in holes in the base of fir trees, on fir slopes only; and that the merriamis live on the pine-oak slopes, for the most part in the rocks and under ledges. Further they apparently mix, and forage together on the boundary line between the habitats.

Now might arise the question as to whether or not there is any interbreeding. Science would say ~~there~~ there could be, but that there would not be any persistance of the offspring. Apparently these chipmunks do interbreed. I shot an interbreed this morning, and peculiarly enough I shot him off

French Gulch, 6700 ft., Piute Mts.,
- Oct. 30, 1933.

one of the logs bridging the two habitats at the bottom of the canyon. It is neither one or the other of the two chipmunks, but is, rather, a mixture of the two. (His number is "309") He has the tail of the merriami, and the head markings of the merriami; while his whole general body coloration and design ~~are~~ resemble ~~of~~ the quadrivitattus. His measurements are between the two. I'll try to get more like him tomorrow, our last day here.

Trap record: From my meadow creek line I took a pack rat, (from the same trap in which I caught two chipmunks and one other pack rat.)

I had the bait taken again from the same steel trap which was robbed up the canyon last time. I saw fresh coon tracks, not too near the trap; so it may or may not be a coon which is doing the "thieving". I could make out no tracks near the trap.

✓ 309	Eutamias - interbreed -	♂ wt: 60	235-100-33-19
✓ 310	Eutamias-quadrivitattus	♂ wt: 61	210-88-34-20
✓ 311	Eutamias quadrivitattus	♂ wt: 57	210-83-34-19
✓ 312	Eutamias quadrivitattus	♂ wt: 69	214-82-33-20

French Gulch, 6700 ft., Piute Mts.,
- Oct. 30, 1933. —

✓313	Eutamias quadrivittatus	♀ wt: 60	220-87-33-20
✓314	Neotoma fuscipes	♂ wt: 202	370-170-37-35
✓315	Thomomys bottae	♀ wt: 142	225-65-30-7
✓316	Sciurus griseus	♂ wt: 722	560-270-75-38

— Oct. 31, 1933. —

The world was glistening white last night and this morning. After blowing up a storm all day yesterday, it snowed last night. The snowfall wasn't heavy in the meadow being more of a "sleety frost" than snow. However the higher hill slopes had from ½ inch to 1 inch snowfall fall.

The hunting was poor this morning. All morning I only saw one bird, a stellar jay. From my traps I caught only two boylei. Ray caught a pack rat in the willows.

As soon as we got back from ~~camp~~ our trap lines we broke camp. We left the meadows about noon. We drove by way of Kelso valley and Kernville back to Walker Basin.

✓317 Neotoma fuscipes ♂ wt: 296 405-190-38-34

SW end Walker Basin, Kern Co., Calif.,
- Nov. 2, 1933. -

318 Peromyscus m. sonoriensis ♀ wt: 20 153-74-20-17
319 Dipodomys agilis p. ♀ wt: 66 300-180-43-18

We set up camp last night on Mrs. Rankins property, at the South end of the big willow patch which occupies the west center part of the basin.

I ran a trap line of 18 mouse traps through the willows, setting my traps at the foot of trees, out in the open and all other associations available within the willows. I caught two peromyscus sonoriensis at the foot of trees, and one dipodomys agilis at the foot of a tree. I set out two gopher sets, but didn't catch anything.

Tonight, while setting out a longer trap line I shot a horned lark and two butcher birds.

The temperature this morning was 25° F.

- Nov. 3rd, 1933. -

Trap record: Leaving my willow line intact, last night I set out 10 traps in the Russian thistle, and 12 traps in the sandy draws, and areas near the

SW part Walker Basin, Kern Co.,
- Nov. 3, 1933. -

middle of the basin. In the latter area were many small holes which I took to be perognathus ~~inoatu~~ inornatus. However, none of these 12 traps were even touched. Maybe the perognathus have left? From my ten traps in the thistle I took four dipos and one peromyscus. From my willow line I took one dipo and three peromyscus.

I shot two horned larks, one robin, one nutall woodpecker, one barn owl (badly shot), and two lark sparrows.

320	Peromyscus sonoriensis	♂	wt: 21	150-74-22-19
321	Peromyscus sonoriensis	♀	wt: 22	165-77-19-17
322	Dipodomys agilis	♀	wt: 66	290-170-43-19
322(a)	Dipodomys agilis	♂	wt: 67	300-180-47-18
323(b)	Dipodomys agilis	♀	wt: 70	305-183-44-18
324	Dipodomys agilis	♂	wt: 67	300-175-43-18

- Nov. 4, 1933. -

For some reason I'm not getting the mammals out of here that should be here. Perhaps it is because the basin has been cultivated too much, or maybe because the basin is too well grazed by sheep. Anyway the traps I have set in sand draws, sand-lupine associations, and sand-thistle

SW part Walker Basin, Kern Co.,
- Nov. 4, 1933. -

associations have produced no perognathus. The sand-thistle is the only association which seems to contain mammals. Many dipos & many peromyscus live here. I caught one dipo and five peromyscus here this morning, but that's all I got.

I shot two audubon warblers from a small flock in a cottonwood, and I shot one juncos from a small flock in the willows. I saw a hairy and a willow woodpecker, new to the camp. I only saw about 12 horned larks, but didn't get a shot at them.

Ray took a dipo a few feet from camp:

325	Dipodomys agilis	♂ wt: 76	315-96-46-19
326	Horned lark	♂ wt: 30	ad.
327	Horned lark	♂ wt: 30	ad.

- Nov. 5, 1933 -

I am about convinced that there are no perognathus in the basin. None of my 50 perognathus traps caught anything. I found a half a dozen barn owl pellets this morning under the tree where I killed the barn owl. There were no perog-

SW part Walker Basin, Kern Co.,
— Nov. 5, 1933. —

natrix skulls in the pellets, in fact dipo skulls were the only one. I'm going to try another location, though there are no more possible good associations.

I caught 4 dipos and three sorexes this morning. And I finally got a gopher. I shot a ground squirrel, which I'll use for owl bait, and I shot two juncos. Yesterday afternoon I shot six horned larks and one bluebird.

Ray has been hunting and trapping down near the corner of the basin where there is considerable marshy ground. He caught two moles down there last night, besides 4 gophers. There are pipits down his way, and many horned larks. Also, practically all the blackbirds are down there. Up my way, in the willows there are linnets, sparrows, hawks, woodpeckers, meadowlarks and juncos, with occasional horned larks, bluebirds, audubon warblers, and less often, brown blackbirds.

328	Horned lark	♂ wt. 32 gms. ad.
329	Horned lark	♂ wt: 31 gms. ad.
330	Scapanus latimanus	♂ wt: 64 165-38-20
331	Dipodomys agilis	♂ wt: 75 310-190-46-20

SW part Walker Basin, Kern Co.,
-Nov. 5, 1933.-

✓332	Dipodomys agilis	♂ wt: 69	300-185-46-19
✓333	Dipodomys agilis	♂ wt: 75	305-188-46-18
✓334	Thomomys bottae	♂ wt: 90	210-74-30-7
✓335	Thomomys bottae	♂ wt: 94	200-63-27-7

-Nov. 6, 1933.-

Yesterday I took up all my traps except those set out in the sand areas for perognathus. I caught one dipo only. I set out about 50 more traps today all the way across the basin, up to the mouth of Thompson canyon, including every possible association. If I don't get some perognathus inside of the next three nights I'll be convinced that there are none in the basin.

I walked down the other way with Ray last night, and saw that several of the fields down there are literally "perforated" with moles. All the moisture in the basin is down his way.

I shot two juncos from a blue oak in Thompson canyon this morning, and a horned lark near camp. I shot a pipit down in the marsh

SW part Walker Basin, Kern Co.,
- Nov. 6, 1933. -

last night.

✓ 336	Horned lark	♂ wt: 27	ad.
✓ 337	Scaponnus	♂ wt: 67	160-35-22
✓ 338	Scaponnus	♂ wt: 67	165-37-22
✓ 339	Thomomys bottae	♂ wt: 170	250-85-35-9

- Nov. 7, 1933. -

At last, after a week of trapping, I have caught a perognathus. One inornatus. I caught him in an open field, sandy, and with a low brown weed as the only vegetation. The exact location was 250 yds. SE by S of N. J. Williams ranch house. Though I had other traps around, at similar looking places, I only got that one. My traps in the center of the basin, as usual, caught nothing. My traps east of Williams', & the mouth of Thompson caught only dipos, four of them. I took up my traps in the middle of the basin, and together with 20 more concentrated them in the general area where I got the inornatus.

I shot 5 horned larks from a large flock; no sage sparrow out

SW part Walker Basin, Kern Co.,
— Nov. 7, 1933. —

I ~~a~~ rabbit bush. He was in company with about three more. I shot one
guned him at camp.

Last night Ray caught three microtus down in the marsh, as well as catching one more mole.

The weather continues to be cold, 14° to 20° in the mornings. The days are mostly clear, and somewhat windy.

✓ 340	Perognathus inornatus	♂ wt: 7	115-60-17-7
✓ 341	Microtus	♂ wt: 67	205-60-24-17
✓ 342	Dipodomys agilis	♂ wt: 64	290-180-44-18
✓ 343	Thomomys ostiae	♀ wt: 99	200-55-28-7
✓ 344	Horned lark	♂ wt: 27	ad.
✓ 345	Horned lark	♂ wt: 27	ad.
✓ 346	Horned lark	♂ wt: 30	ad.

— Nov. 8, 1933. —

Out of the 50 traps I had out for perognathus last night I got only a juvenile perognathus and one perognathus. I had ten traps in front of perognathus holes spring, and I expect perognathus must have sprung part of them. These mouse traps are too big for perognathus.

I shot one ground squirrel, and

SW part Walker Basin, Kern Co.,
- Nov. 8, 1933. -

shot at a cottontail in the willows. I hit him breaking one or both hind legs, but he got into a hollow tree before I got to him. I couldn't get him out.

✓ 347 Perognathus inornatus ♀ wt: 7.5 126-68-18-7

✓ 348 Thomomys bottae ♀ wt: 93.2 195-67-26-7

~~349 Horned lark ♀ wt: 26.5 ad.~~

- Summary -

In one way this has been a pretty good camp. We got a new mammal, the mole, and seven birds new to the expedition. We got a fair start on our horned lark series, as well as improving, or increasing several other series.

In another way, particularly to me, this has been a poor camp. I spent so much time trying to get perognathus inornatus and only got two. I had a hard and uninteresting section of the basin from which to take specimens. Also I didn't put up many specimens.

Last winter's snow lay on the floor of the basin for several weeks. That fact plus poisoning, cultivation, and grazing probably accounts for the

SW part Walker Basin, Kern Co.,
- Nov. 8, 1933. -

scarcity of perognathus.

Dipodomys are quite common, occuring chiefly in the Russian thistle. Ground squirrels are common on the edge of the basin. We could find no signs of pack rat. Smoriensis is the only peromyscus. Rabbits are extremely scarce. I saw only one cottontail. He was in the willows.

- Nov. 9 - Nov. 12, -

We moved to Kernville on the 9th; setting up camp at the rearing ponds on the main fork of the Kern river, 3 mi. NE. of Kernville. We stayed until Saturday afternoon, hunting deer. We failed to get one.

We came back into the basin the night of the 11, and on the 12th set up camp at the extreme SW corner of Walker Basin where Barin creek plunges down the canyon.

This having been a side venture, a vacation really, I didn't keep notes. Ray has more complete notes.

Rankin Ranch, 3300 ft., Walker Basin, Kern Co., Calif.
— Nov. 13, 1933. —

✓ 349 Golden crowned sparrow wt: 34, ♂, ad.
✓ 350 Black phoebe ♀ wt: 21, ad
✓ 351 Say phoebe ♀ wt: 21, ad.

We started this new camp off with a bang. Ray is working down basin creek canyon. I'm working the small tule swamps at the head of the creek, just befor it plunges down the canyon.

The marsh is shaped like a "Y"; the lower end being the down canyon end. The upper two forks originate in springs about 200 yards out in the flats. The basin creek of Thompson canyon does not flow through the basin.

The marsh at the widest is not over 50 feet. Occasional willows line the edges. Tules occur in the middle of the marsh, being thickest at the lower end. Between the tules + the edge of the swamp is an open space of water cress covered water. The bottom is muddy and sticky, and in some places, sandy.

The birds, for the most part

Rankin Ranch, Walker Basin,
-Nov. 13, 1937.-

keeps well down in the center of the tules and in the willows. Occasionally marsh wrens, and golden crowned sparrows may be seen feeding in the water cress open spaces.

This morning I set out 13 mouse traps in tall grass at the edge of the swamp. I set one gopher trap at camp. Most of the morning I spent hunting.

I first saw and shot a marsh wren. I had to wade into the water up to my hips to get him. So having got wet and muddy, I decided to shoot all the birds I could from the marsh. I shot another tule wren, 3 golden crowned sparrows and a song sparrow. I shot a jack snipe over an open and dry field adjoining the marsh. I shot an audubons warbler from the willows. I shot, nearer home, a say phoebe, and a black phoebe in the marsh. From willows I shot a sharp-shinned hawk and a sparrow hawk. From my traps this afternoon I took ~~two~~ three song sparrows, 1 tule wren, and an unknown sparrow.

Rankin Ranch, Walker Basin.
- Nov. 13, 1933. -

Between us we took a tremendous bird census today. We recorded forty-one (41) species of birds, not including two unknowns. The birds are the first 41 listed for this camp in the front of the book, or back as I'll probably fix it up later. My census for today is as follows.

1. Killdeer - - - - - - - - 8
2. Jack snipe - - - - - - - 5
3. Meadowlark - - - - - - - 40
4. Horned lark - - - - - - - 3
5. Lark sparrow - - - - - - - 6
6. Marsh hawk - - - - - - 1
7. Sparrow hawk - - - - - 1
8. Sharp shinned hawk - - - - 1
9. Pigeon hawk - - - - - - - - 1
10. White crowned sparrow - - - 12
11. Golden crowned " - - - - 25
12. Song sparrow - - - - - - - 15
13. Chipping sparrow - - - - - 4
14. Unknown sparrow - taken - - - 10
15. Lewis woodpecker - - - - - 200
16. Western bluebird - - - - - 150
17. Robin - - - - - - - - 100
18. Varied thrush - - - - - - 1
19. Ruby crowned kinglet - - - 10

Kaye - 1933.

Rankin Ranch, Walker Basin

- Nov. 13, 1933. -

20. Linnet - - - - - - - 60
21. Purple finch - - - - - - 20
22. Say phoebe - - - - - - - - 1
23. Black phoebe - - - - - - - 2
24. Audubon warbler - - - - - 1
25. Flicker - - - - - - - - 1
26. Junco - - - - - - - - - - 1
27. Brown blackbird } - - - - - - 100
28. Red wing "
29. Crow - - - - - - - - - - - - 2

This census doesn't take in the great quantities of birds flying in flocks further in basin, which I couldn't ~~see a~~ recognize at the distance. In most cases, the numbers of certain species were approximated.

Tonight from my traps I took one shrew - eaten by another; and three without buttons.

The weather is warmer, 100 warmer than it was down in the willows.

- Nov. 14, 1933. -

✓ 352 Sorex ♂ wt: 7 102-42-7-8
✓ 353 Thomomys bottae ♂ wt: 93 195-53-25-8

Rankin Ranch - Walker Basin
- Nov. 14, 1933. -

354	Thomomys bottae	♂ wt: 190	252-70-30-8
355	Reithrodontomys	♂ wt: 10	135-70-16-14
356	Peromyscus m. s.	♀ wt: 25	164-75-18-20
357	Virginia Rail	♂ wt: 100	skull ½ ossified
358	Virginia Rail	♂ wt: 102	" " "

- Nov. 15, -

359.	Sorex	♂ wt: 6	93-36-7-7
360.	Microtus	♀ wt: 59	193-62-23-18
361	Peromyscus truei - (R.M.G.)	♂ wt: 28	215-118-24-24
362	Neotoma fuscipes - (R.M.G.)	♀ wt: 274	375-187-40-31
363	Thomomys bottae - (R.M.G.)	♀ wt: 71	190-65-26-7
364	Thomomys bottae - (R.M.G.)	♀ wt: 112	220-65-27-8

I'm going to write yesterday's notes. I wasn't up to it last night. Firstly from my traps I caught three reithros, two shrews, one microtus, one peromyscus, and two gophers. The whole catch with the exception of the gophers came from the one patch of grass at the marsh's edge.

I had a peculiar bird hunt. First, after considerable difficulty I took two virginia rails from the tules. The strange catch were the two slender billed nuthatches I shot from a willow overhanging the marsh. also c'

Rankin Ranch - Walker Basin
- Nov. 15, 1933. -

shot a green-backed goldfinch from a willow. In my traps I caught one song sparrow, and another of the unknown species of sparrows.

Ray has been hunting down canyon and has been unable to find either a wren tit or a thrasher. He says also that Calif. jays and brown towhees are scarce down there.

My bird census for yesterday, the 14th, resembles very much the one of the day before. I didn't see any more phoebes however.

Today was rather a poor day for both of us; however, saved from complete "poorness" by Ray shooting a screech owl from a willow at eating just before breakfast. I shot another slender billed nuthatch from the same willow in which I took the first two. My traps produced next to nothing also. One shrew and one microtus being all I caught.

- Nov. 16, 1933. -

365 Microtus ♂ wt: 50 170-53-23-17
366 Microtus ♀ wt: 99 205-60-23-17

Rankin Ranch - - Walker Basin.
- Nov. 16, 1933. -

367 Neotoma fuscipes (R.M.G.) ♀ wt: 186 377-190-36-31
368 Peromyscus boylei (R.M.G.) ♂ wt: 26 202-103-21-20
369 Horned lark ♂ wt: 30 ad.
370 Horned lark ♀ wt: 27 ad.

The first two days were so good we couldn't hardly expect the following days to be so good. Today was not good, not bad. I got only two microtus in my traps. Ray caught 2 neotoma, and some peromyscus, including truei and boylei.

I shot three horned larks, one house wren, one brewer blackbird and one willow woodpecker; from open field, orchard, marsh, and willows respectively.

This evening I caught one mole from a series of five sets I made this morning in the same field from which Ray took his.

I have scouted the surrounding country fairly well but have found no good perognathus signs, tho I set out ten traps tonight in doubtful perognathus country.

Ray has 6 steel sets down the canyon, but reports no carnivores.

Rankin Ranch - - Walker Basin.
- Nov. 16, 1933. -

During the 14 days we have been active in the basin I have found a good many - say 10, old badger holes, from all parts of the basin. I have been unable to find any fresh holes. Mrs. Johns, who lives in the center of the basin says that there were a good many badgers here last year, but that she seen none this year.

Mrs. Rankin says snow lay on the ground for three months last winter. Perhaps, the badgers found the "pickings" so slim that they moved out of the basin. The long snow, as I suggested before, may also account for the scarcity of perognathus.

We visited Mrs. Rankin last night, and she told us a good many things of interest, and some things of interest to our trip.

Mrs. Rankin moved into the basin in 1857, and has been here since. When she first came the basin was green with clover, and the surrounding hills were clothed with filaree instead of the present

McKaye - 1937.

Rankin Ranch, Walker Basin;
- Nov. 16, 1937. -

fortail. In 1861 and 1862 heavy rains flooded the valley, washing in much sand and destroying most of the clover. From that time to this conditions have not changed much except that the basin has gradually got drier, which really constitutes considerable change. There used to be two small lakes, or ponds in this end of the basin, but in 1922 the last one dried up.

Previous to 1922 there used to be a great many ducks in here in the winter. Mrs. Rankin says there were thousands of spoonbill, mallard, scaup, canvas back, in here. She says there were also a few geese and many sandhill cranes. One year she saw two swans in here. The cranes used to be so plentiful that the basin was once called "la grulla" meaning "crane". Only very occasionly since 1922 have ducks been seen in here. One of Mrs. Rankin's ranch hands says that during the spring he has -

Rankin Ranch — Walker Basin.
— Nov. 16, 1933. —

saw black rail and yellowlegs in the tules here. He described the birds, didn't name them.

— Nov. 17, 1933. —

Sick all day, didn't do any specimens, or anything else except run my trap line and shoot 2 virginia rails and one song sparrow.

— Nov. 18, 1933. —

O.K. Today. Caught one shrew. Yesterday caught one gopher, one shrew, three peromyscus. Today shot one microtus, 4 horned larks, one brewer blackbird and one song sparrow.

✓ 371	Sorex	♀ wt: 5.5 gm.	105-45-12-7
✓ 372	Scapanus	♂ wt: 59 gm.	163-35-22
✓ 373	Thomomys bottae	♂ wt: 169	225-67-36-9
✓ 374	Perognathus calif.	♀ wt: 22	155-70(stub)-25-11
✓ 375	Peromyscus boylei (R.M.G.)	♀ wt: 31	212-102-21-20
✓ 376	Peromyscus truei (R.M.G.)	♂ wt: 38	230-133-24-25
✓ 377	Neotoma fuscipes (R.M.G.)	♀ wt: 208	340-150-37-30
✓ 378	Thomomys bottae (R.M.G.)	♂ wt: 132	230-67-30-8
✓ 379	Virginia rail	♂ wt. 100	ad.

Rankin Ranch, Walker Basin,
- Nov. 19, 1933. -

380 Neotoma fuscipes (R.M.G.) ♂ wt: 291 370-170-39-31
381 Eutamias merriami ♂ wt: 78 260-110-34-21
382 Peromyscus truei ♀ wt: 23 205-108-23-27
383 Peromyscus truei ♀ wt: 22 190-97-24-25
384 Peromyscus truei ♂ wt: 23 202-106-23-26
385 Peromyscus truei (R.M.G.) ♀ wt: 34 200-104-23-25
386 Peromyscus truei (R.M.G.) ♂ wt: 23 190-98-23-25
387 Peromyscus truei (R.M.G.) ♂ wt: 26 202-105-23-26
389 Virginia rail ♀ wt: 86 ad
390 Neotoma fuscipes (R.M.G.) ♂ wt: 132 315-153-32-29
391 Horned lark ♂ wt: 28 ad.

Last night I drove up the canyon at the east end of the basin, to look the country over and to set traps. In the first place the whole canyon is a game preserve. In the second place, the canyon is heavily grazed by sheep and cattle. Consequently, it isn't the most ideal place to hunt and trap. I did look the place over thoroughly. I saw very little sign. A few dipos, no perognathus. However I set 10 traps up on a rocky hillside, and 12 in the flats at the foot of the canyon. I also hunted the area. I was lucky and got three bush tits, two plain titmouses, and one bewick wren. This morning I hunted the whole canyon and didn't get

Rankin Ranch - 3300 ft., Walker Basin.
- Nov. 19, 1933. -

anything.

In my hillside traps up the east canyon I caught three trucis; in my ~~flats~~, traps at the mouth of the canyon I caught 4 sonoriensis. In my tale traps here at camp I caught one microtus and one sonoriensis.

Mrs. Rankin told me today that there were both black and brown bears here, but that the black never got into the basin.

Ray hunted the south side of the basin today finding a canyon rich in material. He got a Calif. woodpecker - our first off the mountain. He also saw two horned owls.

- Nov. 20, 1933. -

392	Sorex	(R.M.G.)	♂	wt: 5.5	105-42-7-8
393	Sorex	(R.M.G.)	♀	wt: 5.5	102-40-7-8
394	Perognathus calif.		♀	wt: 22	200-120-27-12
395	Peromyscus ~~trovei~~ eva.	(R.M.G.)	♀	wt: 41	250-140-27-25
396	Peromyscus trovei		♂	wt: 22	185-90-24-25

This is our last day in the basin. Tomorrow we are going into Kelso valley. Todays we spent but little time hunting. In my traps I caught one neotoma, in the

Rankin Ranch, 3300 ft., Walker Basin,
— Nov. 20, 1932 —

tules, one dipo at the mouth of the east canyon; and one perch on the and one twice in the rocks up the east canyon.

This camp came very nearly being as good a camp as Thompson canyon. We greatly improved some of our series here. Brown towhees, bush tits, nuthatches chiefly were improved. We got several new birds to the expedition and made our list of "dismal deficiencies" less.

We have about all the data on the natural history of the basin available now, and it remains but to sum it up.

— Nov. 21, -23 —

These two days were spent in getting moved to Kelsoe valley. On the 22nd I shot three horned larks out of a flock of 8 drinking from a stream 2 mi. above Sageland in Kelsoe canyon. From the Joshua in Kelsoe valley proper, on the 22nd I shot two cactus wrens, one cactus woodpecker and one jackrabbit. We set up camp at 3:30 P.M.

2 mi. No. Sorrell's Ranch, 4500 ft., Kelsoe Valley, Kern Co., Calif., Nov. 23, 1933.—

397	Lepus californicus	♂ 2087.7	530-100-120-145 (N)
398	Peromyscus boylei	♂ 25 gm.	190-104-24-21
399	Peromyscus m.s.	♂ 16 gm.	153-74-22-18
400	Neotoma l. lepida	♀ 92 gm.	260-112-30-27
401	Ammospermophilus l. leucurus	♂ 95 gm.	202-60-36-11
402	Ammospermophilus l. leucurus	♀ 116 gm.	215-62-36-11
403	Eutamias merriami	♂ 53	235-108-36-20
404	Dipodomys ~~agilis~~ mohavensis	♂ 70	290-171-43-15
405	Dipodomys mohavensis	♀ 70	290-170-44-14
406	Dipodomys mohavensis	♀ 69	290-169-43-13
407	Dipodomys mohavensis	♀ 61	271-160-42-14
408	Dipodomys mohavensis	♂ 58	276-167-43-14

This camp has also started out with great promise. It was selected after having spent the greater part of the day yesterday looking for a suitable camp site. We are located up a canyon, about 400 feet above the floor of the valley. Our camp is at a spring, in a vegetative association of willows, oaks, and digger pine. The undershrub consists of sage and ceanothus. The canyon is steep and rocky. Occasional piñon pines are scattered about. The floor of the basin is full of joshua, cholla cactus, sage and rabbit brush. The soil everywhere is sandy.

The spring here at camp seems to

Kelsoe Valley, 4500 ft., Kern Co., Calif.
- Nov. 23, 1933. -

be a collecting spot for birds and mammals. Sage sparrows are continually at the spring. White crowns, kinglets, juncos, brown towhees, are less frequent. Chipmunks occasionally ~~seen~~ come down to the spring to drink.

Our camp is auspiciously located being right on the line between the lower and upper sonoran zones. The canyon leads up to a peak of over 7000 feet; so the transition is close above us.

The night we camped I set out a trap line down in the floor of the valley. I ran 26 mouse traps and 10 rat traps thru sage, rabbit brush and joshua. Five of my rat traps were set in pack rat nests among the joshua.

This morning I ran my traps and made a good catch. In the sage and rabbit-brush I caught four peromyscus sonoriensis. In the joshua I caught nine dipodomys mohavensis and one pack rat. I also caught one peromyscus truei, but the beetles destroyed it. I shot one ammospermophilus and one female cactus woodpecker.

Later on, near noon, back here at camp I heard a canyon wren ~~and~~ a trilling up in the rocks. I went after him but

NW part Kelso Valley, 4500 ft.,
-Nov. 23, 1933.-

got instead a rock wren and an ammo.
Also I have set four rat traps at good pack rat nests up here in the canyon, but so far they haven't been touched. I expect ~~they~~ the rats are fuscipes. I saw a screech owl to-night fly by camp.

- Nov. 24, 1933.-

This is a big morning for the expedition. Ray caught a spotted skunk and shot a brush rabbit.
My trap line was productive of very little this morning: 2 sonoriensis, one tuei in the joshua, one dipo in the joshua, one ammo in the joshua, two neotoma lepidas in the joshua, one of which had been half eaten - probably by a carnivore. I shot three more ammos, and one ruby crowned kinglet. Bird life seems scarce in the valley.

409	Dipodomys mohavensis.	♂	wt: 60	280-168-43-14
410	Dipodomys mohavensis	♂	wt: 68	280-160-43-15
411	Dipodomys mohavensis	♂	wt: 64	293-171-44-14
412	Dipodomys mohavensis	♀	wt: 59	282-168-43-15
413	Neotoma l. lepida	♂	wt: 259	290-130-34-29

NW part Kelsoe Valley, Nov. 25, 1933.-
4500 ft.,

414	Peromyscus truei	♂ wt: 24	190-90-23-25
415	Peromyscus ~~boylei~~ truei	♂ wt: 24	200-100-23-27
416	Peromyscus m.s.	♀ wt: 17	155-70-18-19
417	Ammospermophilus	♂ wt: 87	200-58-35-11
418	Ammospermophilus	♂ wt: 94	200-54-35-10
419	Ammospermophilus	♀ wt: 90	196-50-35-10
420	Ammospermophilus	♀ wt: 86	165-23 (stub)-36-11

Nov. 25, 1933.-

421	Lepus californicus	♀ wt: 2037	630-90-115-145
422	Dipodomys mohavensis	♂ wt: 67	280-170-43-~~20~~ 15
423	Dipodomys mohavensis	♂ wt: 70	290-173-44-15

We didn't do much today. We took the afternoon off in an attempt to listen in on the "Big Game".

This morning I caught one neotoma fuscipes here at camp. two neotoma lepida, five dipodomys, two truei, two sonorensis and two ammospermophilus down in the joshua.

I hunted all the way across the valley but didn't see a living thing. Back here at camp I shot a green-back goldfinch and a junco at the spring.

I set out three coyote sets at the foot of the hill.

Kaye - 1933.

NW part Kelsoe Valley, 4500 ft.,
- Nov. 26, 1933. -

The bait was taken from two of my coyotes sets last night. The traps were uncovered but not spring. They were only one-trap sets. Now, since the coyotes will take the bait, I'll make two and three trap sets.

My trap line down in the valley produced three dipos, two tuli, one sonoriensis and three neotomae.

424	Dipodomys mohavensis	♂ wt: 63	295-175-44-15
425	Dipodomys mohavensis	♀ wt: 53	268-160-41-13
426	Dipodomys mohavensis	♂ wt: 59	290-172-44-16
427	Neotoma fuscipes	♀ wt: 197	380-175-36-32
428	Neotoma lepida	♂ wt: 189	310-125-32-30
429	Neotoma lepida	♂ wt: 158	305-131-34-33
430	Ammospermophilus	♂ wt: 109	210-55-36-11
431	Neotoma lepida	♂ wt: 163	324-143-33-32
432	Neotoma lepida	♀ wt: 134	310-140-31-34
433	Neotoma lepida	♀ wt: 107	280-125-38-31
434	Dipodomys mohavensis	♂ wt: 62	285-175-44-14
435	Dipodomys mohavensis	♂ wt: 66	295-175-44-14
436	Sylvilagus bachmani	♀ wt: 590	355-50-80-63

Hunting has not been profitable in the valley; so I hunted this morning on the north facing slope of this canyon. I shot one brush rabbit, one bewick wren, one sage sparrow and one fox sparrow. Besides these I saw another brush rabbit I didn't get.

NW part Kelsoe Valley, 4500 ft., Kern Co., Calif.,
- Nov. 27, 1933. -

As som as I left camp this morning to run my trap line I saw a large hawk sitting on top of a digger pine. I shot it. It was a rough legged hawk. Also I saw many more birds than usual down in the joshua, 3 cactus wrens, 2 cactus woodpeckers, one shrike and 6 sage sparrows.

From my traps I took five dipos, three tulei, one sonoriensis, one ammo, and one pack rat. I had out 10 good pack rat sets. I caught four dipos in them and only one pack rat!

Back at camp, or nearer camp I shot a jack-rabbit. I hunted the north facing slope again this morning, particularly for thrasher and brush rabbit. I saw no thrashers, and only one brush rabbit, and I didn't get him. I shot a brown towhee.

✓ 437	Rough legged hawk	♀	wt: 618	ad?
✓ 438	Neotoma lepida	♂	wt: 220	330-147-30-31
✓ 439	Dipodomys mohavensis	♀	wt: 63	280-160-43-14
✓ 440	Dipodomys mohavensis	♂	wt: 61	288-169-44-14

- Nov. 28, 1933. -

Today the weather has been very

NW part Kelsoe Valley, 4200 ft., Kern Co.,

-Nov. 28, 1933-

threatening all day, in fact it's snowing now. So we moved down to Ray Atwood's house. This afternoon I set a new trap line for neotoma lepida. I set 12 traps only; the weather didn't warrant a longer line. With this snow tonight I doubt if I get anything in my traps tonight

-Nov. 29, 1933-

Four inches of snow on the ground this morning! The sky still overcast. I couldn't find my traps; so Ray Atwood Al Simmons (staying here) and myself took a hike to the top of the mountains. We got up to an elevation of about 7100 feet.

The birds were scarce; though I shot a brown towhee bush tit and calif. jay at successfully higher elevations. The jay was taken at an elevation of about 6500 feet.

We saw many rabbit tracks in the snow, some quail and some deer. Ray Atwood left us halfway up the mountain to follow the tracks of a big buck. He tracked it two miles

NW part Kelsoe Valley, 4200 feet.
- Nov. 29, 1933. -

across the mountains and finally got it with a spectacular 500 yard shot across a canyon!!

The buck was a fine 3 pointer. He dropped it about 2000 feet above the valley and about 6 miles from the house. Al and el, who were to carry it down, got to it about half an hour before sundown. el gutted it and we tried to pole it down, but the canyon was so rocky, bushy and steep that we couldn't carry the deer 100 feet. So I decided in the last few minutes to skin it, cut it in half, and let each of us carry half of it down. I accordingly measured it and hurriedly skinned it all out except for the head and feet. We started down at dark and got in at 7:30. It snowed lightly all the way down.

I made a poor job of skinning it. In the first place I didn't take time to skin off the "flank muscles" of the skin. In the second place Ray Atwood had cut its neck & I had gutted it

elsaye
-1933

NW part Kelsoe Valley, 4500 ft.,
- Nov. 29, 1933. -

through the skin. We brought down 105 lbs. of deer, which was less guts, flanks, heart, liver and blood. I guessed the weight at at 142 lbs.

441 Odocoiles ♂ wt: 142 (?) 1600-190-440-~~210 (notch)~~-190 (notch)-210 (crown)-120 (width).

- Nov. 30, 1933 -

The snow had melted enough so that I could find my traps. I caught one pack rat only.

We were invited down to the Sonells' for Thanksgiving dinner; so outside of some work in the morning we got nothing ~~down~~ done.

- Dec. 1st, 1933. -

442 Neotoma lepida ♂ wt: 122 295-120-31-30
443 Neotoma lepida ♂ wt: 144 360-154-32-34
skull lost
444 Neotoma lepida ♂ wt: 114 290-120-30-30
445 Sylvilagus auduboni ♂ wt: 797 370-70-87-76

I didn't get anything in my traps down in the joshua. So I went all the

NW part Kelsoe Valley, 4200 ft.,
- Dec. 1, 1933.-

way up to the north end of the valley. I set 55 traps in three different associations, thorn, rocks, and sand dunes. The signs don't look very good. If there are any other species of mammals here as yet untaken, I should get one or more of them.

-Dec. 2, 1933.-

746 Roadrunner ♂ wt. 394 Im. ½ ossified.

It takes me over a half a day to run my traps, and I didn't get any new mammals. I caught 3 dipos, 2 neotomas, three peromyscus (?) species (?). I shot a roadrunner at the head of the valley, and 3 brown towhees.

I saw one rock wren, and a flock of piñon jays, but was unable to get them. On the way back I shot two calif. jays. There is very little life at all in the valley. I can walk a mile without seeing a single living thing. I have seen several old badger burrows, but no fresh holes. Mr. Sonell's says that only occasionally are badger seen here.

Al Simmons caught a young coyote today, after weeks of trapping.

NW part Kelsoe Valley, 4200 ft.,
— Dec. 3, 1933.—

✓ 447	Canis	♂	wt: 14 lbs.	960-290-180-110
✓ 448	Dipodomys mohavensis	♀	wt: 61 gm.	285-172-43-12
✓ 449	Dipodomys "	♀	wt: 54	282-172-42-14
✓ 450	Neotoma lepida	♀	wt: 150	348-172-36-28
✓ 451	Thomomys bottae (R.G.)	♂	wt: 90	220-75-31-7
✓ 452	Neotoma lepida	♂	wt: 122	300-136-31-29

Kaye - 1933.

Thompson Canyon
Birds Seen or heard

1. Calif. jay
2. Western bluebirds
3. Fox sparrow
4. song sparrow
5. chipping sparrow
6. White crown sparrow
7. Vesper (?)
8. Lawrence goldfinch
9. Green backed "
10. Yellow warbler ?
11. Audubon "
12. Anna hummingbird
13. Brown towhee
14. Spotted "
15. Slender billed nuthatch
16. Killdeer
17. Jack snipe
18. Bush tit
19. Plain titmouse
20. Red breasted sapsucker
21. Hairy woodpecker
22. Nutall woodpecker
23. Flicker
24. Horned owl
25. Screech owl
26. Crow
27. Raven
28. Marsh hawk.

Kaye-1933.

(Santa Cruz) - Thompson Canyon - Birds

29. Red tail hawk
30. Sharp shinned hawk
31. Cooper hawk
32. Junco
33. Poor will
34. Meadowlark
35. Band tailed pigeon
36. Quail
37. Canyon wren
38. Beewich wren
39. Lutescent warbler
40. Ruby crowned kinglet
41. Allen hummingbird
42. Rock wren
43. Black an Hermit thrush
44. Western ~~wed~~ Warbling vireo
45. Willow woodpecker
46. Piñon jay
47. Mourning dove
48. Stellar jay
49. Red naped sapsucker
50. Brewer sparrow
51. Western robin
52. Golden crowned sparrow
53. Williamson sapsucker
54. Sparrow hawk
55. Mountain quail
56. Townsend solitaire

57. Lewis woodpecker
58. Red wing black
59. Pine siskin
60. Purple finch
✓ 61. Calif. Condor - (?)
62. Pileolated Warbler
✓ 63. Shrike ?
✓ 64. Eared owl (sp. ?)

Thompson Canyon to French Meadows

1. Raven
2. Red tail hawk

French Meadows

1. Mountain bluebirds
2. Stellar jay
3. Calif. woodpecker
4. Hermit thrush
5. Varied thrush
6. Chicadee
7. Slender billed nuthatch
✓ 8. Marsh hawk
✓ 9. Raven
10. Fox sparrow
11. Chipping sparrow
12. Meadowlark

13. Junco
14. Cassin Purple Finch
✓ 15. Golden eagle
16. White-crowned sparrow
17. Golden-crowned sparrow
18. Spotted towhee
19. Townsend Solitaire
20. Flicker
21. Williamson sapsucker
22. Robin
23. Golden crowned kinglet
24. Western bluebird
✓ 25. Sharp-shinned hawk
✓ 26. Band tailed pidgeon
27. Evening grosbeak
28. Green tailed towhee
29. Hairy woodpecker
30. Pygmy nuthatch
31. Plain titmouse
32. Green-backed (?) goldfinch
33. Cedar waxwing
34. Red breasted nuthatch
✓ 35. Crossbill (?)
36. Red breasted sapsucker
✓ 37. Mountain quail
✓ 38. Red tailed hawk
~~39. Williamson sapsucker~~
40. Jack snipe

✓ 41. Poor will
✓ 42. Horned owl - heard
✓ 43. Screech owl - "
44. Western winter wren
45. Audubon warbler
45 ~~46~~. White headed woodpecker
47.

- Walker Basin -

✓ 1. Raven
✓ 2. Crow
✓ 3. Sparrow hawk
✓ 4. Red tail hawk
5. Barn Owl
✓ 6. Flicker
7. Nuttall woodpecker
8. Savannah sparrow
9. White crowned sparrow
✓ 10. English sparrow
11. Linnit
12. Lark sparrow
13. Horned lark
✓ 14. Meadowlark
15. Butcher bird - shrike
✓ 16. Robin
17. Brewer blackbird
18. Bi-color blackbird
19. American pipit.

+ 20. Killdeer
+ 21. Lewis woodpecker
+ 22. Western bluebird
23. Pigeon hawk
24. Audubon warbler
25. Junco
+ 26. Hairy woodpecker
+ 27. Willow woodpecker
✓ 28. Prairie falcon
29. Sage sparrow
✓ 30. Marsh hawk
✓ 31. Turkey vulture

- Rankin's - Walker Basin -

+ 1. Sparrow hawk
+ 2. Pigeon hawk
+ 3. Lewis woodpecker
+ 4. Flicker
+ 5. Robin
+ 6. Western bluebird
7. ~~Marsh~~ Tule wren
~~8. Bewick wren~~
+ 9. Meadowlark
10. Horned lark
+ 11. Ruby crowned kinglet
✓ 12. Crow
+ 13. Linnet
+ 14. Purple finch

Kaye - 1933

15 Audubon warbler
16 White crowned sparrow
17 Golden crowned sparrow
18 Song sparrow
+ 19. Killdeer
+ 20. Jack snipe
+ 21. Brewer blackbird
22. Junco
+ 23. Varied thrush
24 Spotted towhee - Basin creek
25. Brown towhee " "
26. Plain titmouse " "
27. Calif. jay " "
+ 28. Band tailed pigeon " "
+ 29. Red tail hawk " "
30. Hermit thrush " "
+ 31. Mt. quail " "
32. Green backed goldfinch " "
+ 33. Fox sparrow " "
+ 34 Chipping sparrow
+ 35 Lark sparrow
✓ 36 Marsh hawk
37 Say's phoebe
38 Black phoebe
✗ 39. Sharp shinned hawk
40. Unknown sparrow
✗ 41. Redwing blackbird
✗ 42. Savannah sparrow

✓ 43. Golden eagle
44. Virginia rail
~~45. Lawrence goldfinch ??~~
46. Sage sparrow
47. Slender billed nuthatch
48. Screech owl
✓ 49. Shrike
✓ 50. Raven
51 Bush tit
✓ 52. Valley quail
✓ 53. English sparrow
54. Willow woodpecker
55. House wren
55 56. Western knatcatcher
✓ 56. Vesper sparrow
✓ 57. Prairie falcon
✓ 58. Calif. woodpecker
59. Nutall woodpecker
✓ 60. Horned owl
✓ 61. Stellar jay
62. Pine siskin
✓ 63. American pipit
~~64. Valley quail~~
64.

- Kelsoe Valley -

1. Cactus wren
2. Cactus woodpecker

3. Sage sparrow
4. White crowned sparrow
+ 5. Golden crowned sparrow
+ 6. Plain titmouse
7. Brown towhee
8. Calif. jay
9. Roadrunner
+ 10. Raven
+ 11. Western bluebird
12. Fox sparrow
+ 13. Ruby crowned kinglet
+ 14. House wren
15. Shrike
+ 16. Hermit thrush
+ 17. Prairie falcon
+ 18. Rock wren
+ 19. Hairy woodpecker
+ 20. Nutall woodpecker
+ 21. Cooper hawk
22. Junco
~~23. Calif. thrasher~~
+ 24. Canyon wren
25. Bewick wren
+ 26. Screech owl
27. Green backed goldfinch
– 28. Golden eagle
+ 29. Red tail hawk
30. Sparrow hawk

McKaye - 1933.

✓ 31. Williamson sapsucker
✓ 32. Flicker
✓ 33. Mt. quail
34. Crissel thrasher - (calif.)
✓ 35. Horned lark
36. Burrowing owl
✓ 37. Horned owl
✓ 38. Mourning dove
✓ 39. Meadowlark
✓ 40. English sparrow.
41. Townsend solitaire
(✗) 42. Red breasted sapsucker
43. Rough legged hawk
✓ 43. Pigeon hawk
✓ 44. Golden eagle
✓ 45. Linnet
✓ 46. Pinon jay
46 Say phoebe

- Santa Cruz, Calif. Dec. 8, 1933. -

— Summaries —

A. — Mammals:

We didn't do as well on mammals as was desirable, that however, was due to a lack of mammals, rather than the lack of work. We did best at Thompson canyon, there not only being more mammals, but they were the first we took. Kelsey valley was our next best mammal camp. Of course we took several new species there.

The two chief factors in the shortage of mammals are the poison campaign of 5 months ago, and the cold winter last year. Of lesser importance among the factors affecting mammal shortage is, or was the heavy trapping done for carnivores during the last two years.

The facts demonstrating recent changes in mammal life in the Pinto and adjacent territory during the last ~~few~~ 12 months are not too numerous. The chief of these are the empty pack rat nests to be found on all hillslopes. Also

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the tremendous number of unoccupied perognathus (particularly inornatus) holes down in Walker Basin are an indication of a change in conditions there during the last year. Deserted badger holes also point to these recent changes. The heavy snows last winter were probably chiefly responsible for the migration of the packrats to the canyon and basin bottoms. These snows may also be responsible for the shortage of perognathus inornatus. these mammals being the smaller, and consequently less able to survive such strenuous conditions and consequent competition as there must have been. It is even possible that the perognathus lived in danger of predacious attacks by other mammals.

The poison campaigns accounted for the shortage of both species and individuals at French Gulch. We took no dipodomys there, and the fact that they were there is proved both by the tail found by Gilmore, and by the verbal assurance of the

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Woods, the people living there. The scarcity of pack rats as compared to the number of good nests in the meadows was due also to the poison campaign.

Sufficient data on the habits of the smaller mammals is contained in the daily notes. Pages 75 + 76 contain data on results of the poison campaign. Pages 80, 81, + 82 contain life history notes on eutamias quadrivittatus as compared to eutamias merriami. A short history of the Walker Basin country is contained in pages 100 + 101.

Probably the most interesting and surprising part of our mammal work lays in the fact of having caught seven different genera of mammals in a space no greater than 20 by 20 square feet! From this patch of tall, dead grass I took dipodomys, microtus, sorex, peromyscus, perognathus, vithrodontomys, thomomys. This area is described more fully on page 62.

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Distribution of Mammals in the Piute Mts:

1. Peromyscus sonoriensis: Taken at all camps. undoubtedly occuring through out the Piute mts. + adjacent territory. in almost all types of habitats, rocks, brush, sand, grass, hillsides, canyon bottoms, and level plains.
2. Peromyscus truei: Taken at Thompson Canyon, French Gulch, Rambins + Kelso valley. In other words taken everyplace where there were rocky hillslopes apparently unrestricted in range, but restricted in habitat to rocky hillslopes.
3. Peromyscus boylei: Taken at Thompson canyon, French Gulch, Rambins, and Kelso valley. Always near water.
4. Peromyscus crinitus: Taken only in Kelso valley - and only among rocks and cliffs, never out on the levels.
5. Perognathus calif: Taken at Thompson Canyon, Rambins, and Kelso valley. occurs in varied habitats, but more often from

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sandy & rocky hillslopes.

6. Perognathus inornatus: Two ~~specim~~ specimens only taken. Those from Walker Basin, in open sandy flats - little or no vegetation.

7. Reithrodontomys: Taken at Thompson Canyon and Rambins. Occurring only in tall grass, not too far from water.

8. Microtus (kernensis (?)): Taken at Thompson Canyon, Walker Basin and Rambins - and French Gulch. Occurring in short or tall grass, always near water or damp places.

9. Thomomys: Taken at all camps. Fossorial, occurring in all kinds of soils and in all types of habitats.

10. Dipodomys agilis: Taken at Thompson Canyon Walker Basin, and Kelso valley. Found mostly in sandy, brushy areas.

11. Dipodomys mohavensis: Taken only in Kelso valley. Occurs chiefly in among the joshua of the valley proper.

12. Neotoma fuscipes: Taken at Thomp-

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son canyon, French Gulch, Rompin, and Kelsoe valley. Build their nests, among rocks, at the foot of and up in trees. both in dry and near wet places. Wood supply & a sheltered place in which to build not water, seem to be the governing factors in there habitat occurance.

13. Neotoma lepida: Taken only in Kelsoe valley: Build their nests among the joshua.

14. Sorex: Taken in Thompson canyon, Walker Basin, and Kelsoe valley. Occur always at the edge of water.

15. Scapanus: Taken only in Walker Basin. But mole signs seen also in ~~the~~ Thompson canyon and French Meadows. Fossorial

16. Pipistrellus: Taken in Thompson Canyon.

17. Spilogale: Taken only at Kelsoe valley. Occuring in rocky canyons.

18. Bobcat, coyote: Apparently occur throughout the Pinites.

19. Deer: Restricted to mountains

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20. Coon: Occasionally reported, no proof. Transient.

21. Opossum: No sure reports. One animal reported which may have been an opossum. If so, probably transient.

22. Bear: Often taken by trappers and hunters, tracks common in the Pinto. Apparently the brown bear - no grizzlys reported.

23. Mountain lion: One reported with undoubted authority from mountain slopes facing Kelsor valley.

24. Wolf: Two reported from Kelsor valley - Pinto Mts. Doubtful authority. No proof.

25. Badger: Signs in Walker Basin and Kelsor valley. Reported fairly plentiful in Walker Basin last year.

26. Weasel: Reported on fairly good authority, plentiful during the harvest season in Walker Basin.

27. Cottontail: Taken in Thompson canyon and Kelsor valley. Seen

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in Walker Basin also.

28. Brush rabbit. Taken in Thompson Canyon, French Gulch and Kelsoe valley. Restricted in habitat to brushy hillslopes and brushy stream bottoms. Reported on fair authority from Cahinte.

29. Jack rabbit: Taken from Thompson Canyon and Kelsoe valley.

30. Eutamias merriami: Taken in Thompson Canyon, French Gulch, and Kelsoe valley. Occurs among rocks chiefly, preferably in brushy areas.

31. Eutamias quadrivittatus: Taken only from French Gulch. Occurs only among the firs at elevations of over 7000 feet.

32. Citellus beecheyi: Taken in Thompson Canyon and French Gulch. Seen at other camps; occurring in most all habitats.

33. Flying squirrels, ring tail cat, douglas tree squirrel, golden mantled ground squirrel — no report.

34. Ammospermophilus: Taken only in Kelsoe valley. Occurs both

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among rocks, and out in sandy levels. Restricted to desert habitat.

35. FOX: Kit fox undoubtedly occurring throughout the Piutes. Silver fox reported, but supposed to have escaped from a farm.